15c

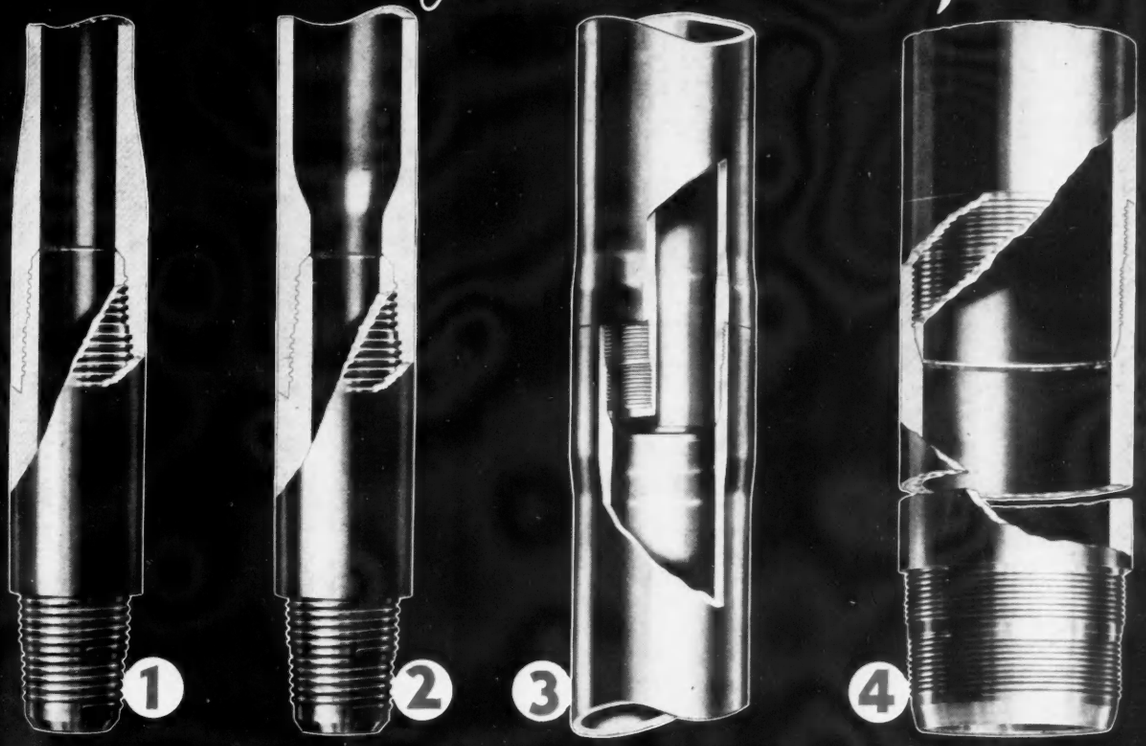
the OIL WEEKLY

OIL and GAS ENGINEERING

FOR OIL AND GAS PRODUCERS AND PIPE LINE MEN

THE WEEK'S NEWS INTERPRETED

More Than Just "Tubular Goods"!



HYDRIL

DRILL PIPE AND CASING

Are ENGINEERED for every oil field purpose

Refer to your 1936 Composite Catalog for complete information about these and other Hydril products. The Hydril section begins on page 711.

1

INTERNAL FLUSH JOINT DRILL PIPE

This is the drill pipe joint that utilizes the full hole principle to the utmost. The size of the hole through the tool joint is the same as the full inside diameter of the drill pipe, thus assuring the maximum circulation area obtainable in all sizes of drill pipe. (Patented)

2

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4

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Larkin Casing Shoes, as well as every other piece of Larkin "Engineered" Equipment, invite your comparison.

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1936 MODELS

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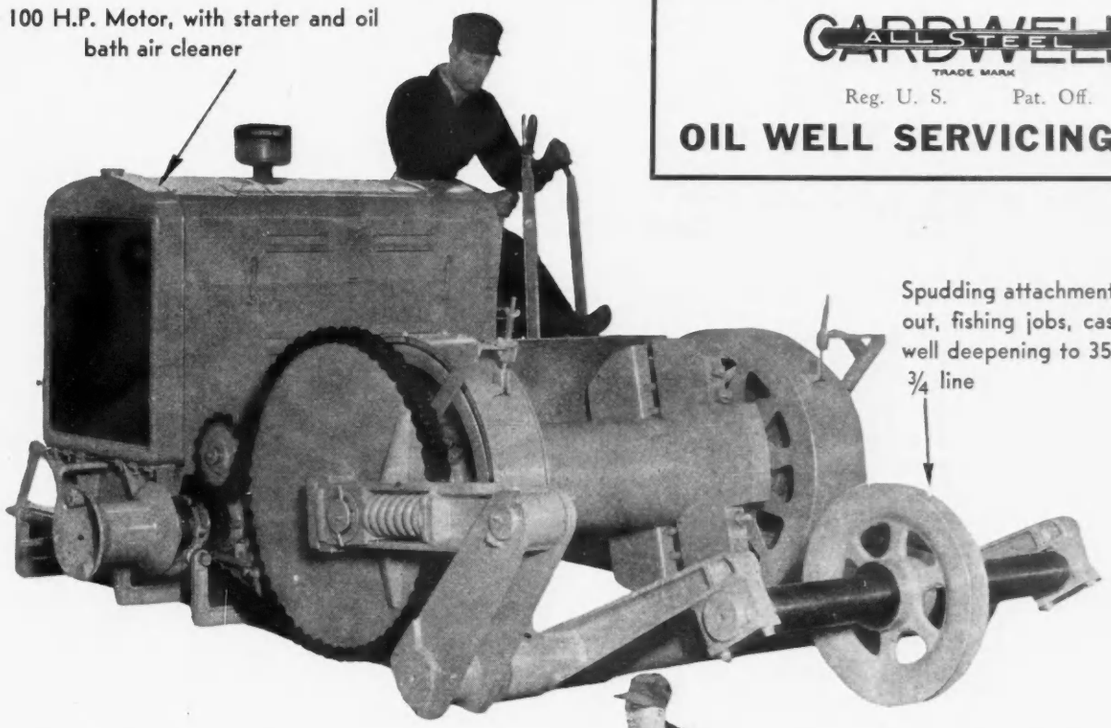
Reg. U. S. Pat. Off.

OIL WELL SERVICING UNITS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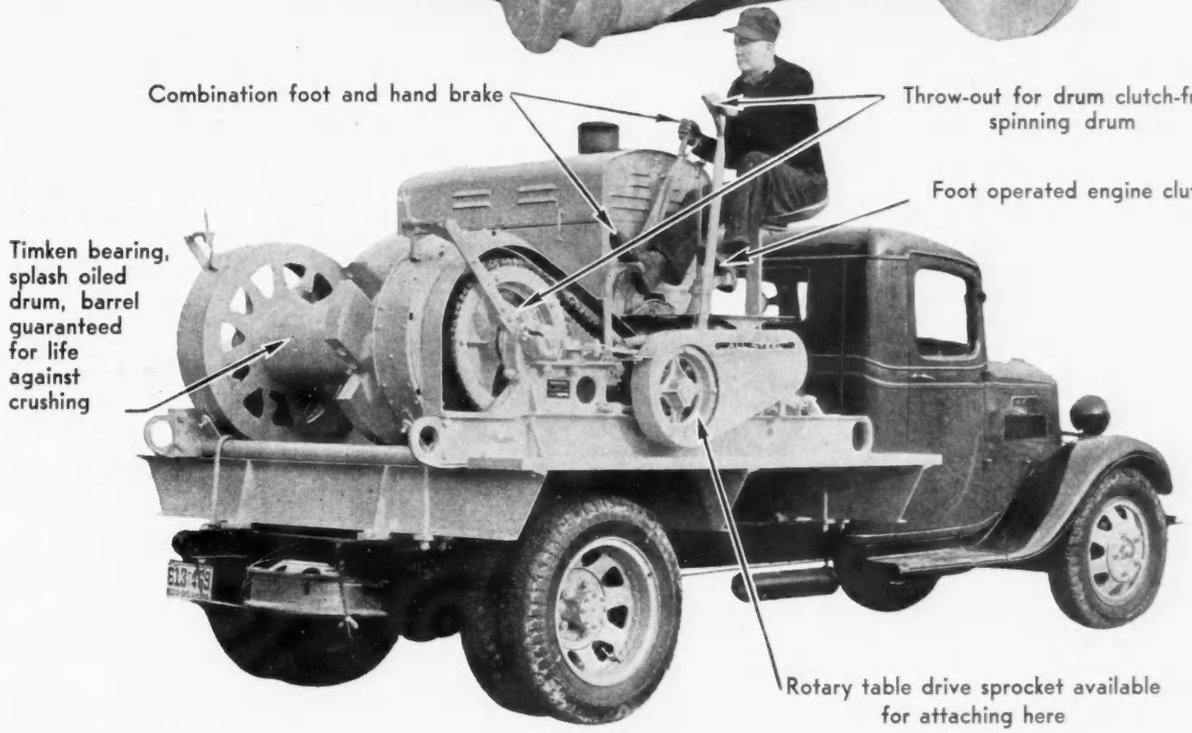
Spudding attachment—for clean-out, fishing jobs, casing ripping, well deepening to 3500 feet with ¾ line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Foot operated engine clutch
Timken bearing, splash oiled drum, barrel guaranteed for life against crushing
Rotary table drive sprocket available for attaching here

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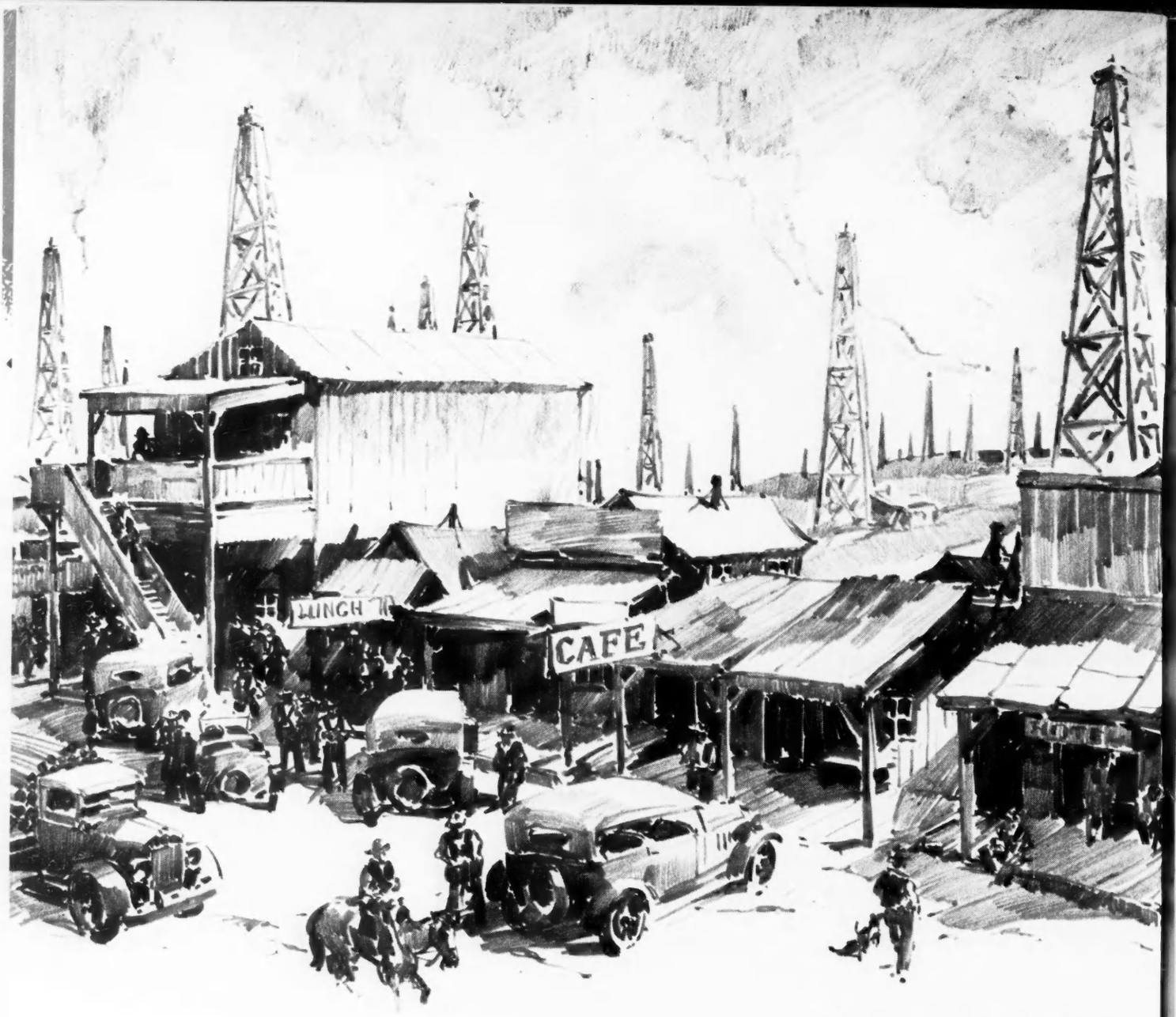

Shacktown in the Corsicana Powell field during the boom days following the Powell comeback in 1922.

Corsicana of slightly more than a decade ago typifies those days when good luck was often the best partner in the gambling rush for oil. Today, the production of oil is a sound industry, taking full advantage of such practical developments as the Dowell method of *Inhibited* Acidizing.

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JAN 22 1936

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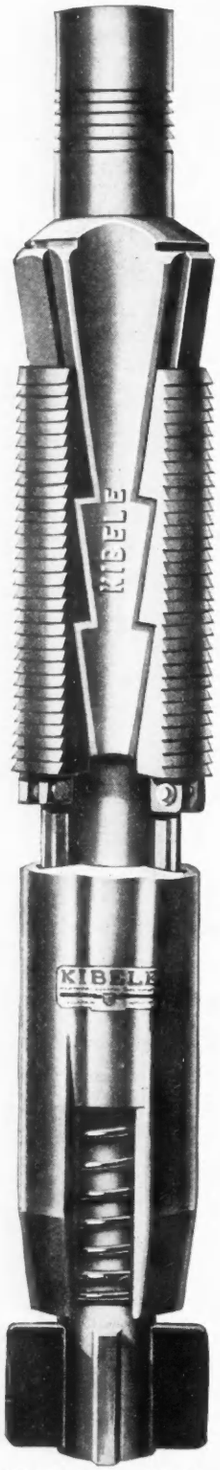
What Happens to Your Casing When Tubing Falls



Kibele 3-Step Catcher for wells below 4,000 feet.
(Patents Applied for)

THE ANSWER DEPENDS UPON YOUR CATCHER

Distorted pipe, due to use of short-slip catcher, may mean:

1. **A Plugged Well**
2. **An Expensive Fishing Job**
3. **No Further Swabbing**
4. **Cleanout Tools Won't Go Down**

We wanted a picture of what the long slips of a Kibele Catcher would do to casing when a string of tubing falls, to compare the result with the damage caused by any short-slip catcher. So we obtained two identical lengths of 7-inch pipe. In one we inserted a 2-step Kibele Catcher and then applied 80,000 lbs. pressure in a hydraulic press. *There was no distortion.*

In the other length we inserted a short-slip catcher and could apply only 50,000 lbs. pressure before dangerous distortion occurred.

Result of 80,000 lbs. with Kibele catcher.

Result of 50,000 lbs. with short-slip catcher.

These are actual photographs, unretouched.

Note Pressures We Applied and Figure the Probable Result in Your Own Wells.

Operators using Kibele Tubing Catchers find that their 2 or 3 times greater slip area provides a reliable safeguard against hazards of distorted pipe. And they know that such greater slip area causes no sacrifice of an extra-large fluid and gas passage. A Kibele Catcher is the best insurance any operator can have against distorted pipe.

This TUBING CATCHER, along with KIBELE PISTONS and SWABS is on sale at oil field supply stores. If you would like further details, send for our new 1936 Bulletin.

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See pages 787 to 790 of your 1936 Composite Catalog for complete details.

THE OIL WEEKLY
FOR OIL AND GAS PRODUCERS
AND PIPE LINE MEN
ENGINEERING • NEWS • STATISTICS
WARREN L. BAKER, Editor.

. . . this Week

MOST encouraging were the increased prices for gasoline that last week followed the higher crude price postings of the previous week. Tank wagon and service station prices were raised generally throughout the territory east of the Rocky Mountains. Most important of the gasoline advancements was the announcement of Standard Oil Company of Indiana that prices throughout all the states in which it sells will be one-half cent higher. **Page 37**

PURCHASERS of Texas produced oil filed nominations totaling 1,239,427 barrels daily for the month of February at the regular statewide hearing last week. Moreover, an increase of 51,300 barrels in the consumer demand over January is calculated by the Bureau of Mines for February. Therefore, Texas producers are looking forward to the probability of receiving an increased allowable next month. East Texas operators again renewed arguments over the method of allocating allowables. **Page 8.**

THE Mid-Continent Oil & Gas Association, Texas division, is to be reorganized at a meeting scheduled for January 25, at Fort Worth. The Association is expected to return to its former active condition, and at this time plans to fight against the rising tide of discriminatory oil taxes. At a meeting January 15, Jake L. Hamon, independent operator of Dallas, was elected president of the Texas Division. **Page 9.**

POLAND appears seriously determined to stem a downward crude oil production trend that has been in evidence since 1922. "Pooled" wildcat efforts, backed by the government and participated in by Polish operators, are the rule rather than the exception. The scheme has possibilities not only of reducing the cost of wildcat drilling but of affording wildcatters more complete facilities for conducting pre-drilling activities. Function of "Pioneer", S. A., makes available also the best technical advice of the nation. **Page 42.**

UNUSUAL opportunities for deep oil development is offered by the Gulf Coast district. The area is considered to have a great thickness of favorable formations, good drilling conditions, and probably a high percentage of producing structures below present tested depths. The depth of the basement in this region is of considerable speculation. In all probability it is beyond 20,000 feet and may be 28,000 feet in depth, according to indications. **Page 19.**

SPEED of erecting and dismantling gas-lift plants has been improved in the Oklahoma City area in several instances. Phillips Petroleum Company has disregarded the usual practice of having cement foundations for the compressors and other machinery, using heavy steel skid bases fabricated from heavy boiler plating and gravel floors. Each compressor is a separate unit and may be moved without disturbing any other machines. The original plant built in this way,

BE PREPARED

IF the oil industry does not prepare itself well in advance and take aggressive steps, it undoubtedly will be the victim shortly of politicians in a tax raid which will make previous taxes look like child's play.

Oklahoma and Texas are the states where most likely ruinous taxation legislation will be framed.

Already in Texas we are hearing that the oil industry should bear the full burden of taxes necessary to provide funds for the state's share of the social security act. Men who have never been classified as friendly to the oil industry are talking taxes against crude oil which, if their desires are met, will be three and a half times as much as the present gross production tax.

"The oil industry is rich—tax it" seems to be their slogan. Some of these men are operating under the delusion that only the big companies will be hit. But it is the history of such taxes that all engaged in the oil business are affected.

Both Oklahoma and Texas already are groaning under oil taxes which are nothing less than discriminatory.

Now is the time to organize to present the oil industry's side of this tax question. Most voters are fair—but many are prejudiced at the very time they think they are fair. They should be informed. Some organization within the oil industry should center on this tax problem. It is the one non-controversial proposition on which all oil men can and do agree.

was solely the result of the necessity of completing construction hurriedly, however, the plan has been so economical that additional plants have been constructed in a similar fashion.
Page 33.

DISPOSAL of oil field brines has long been a question of much importance. Recently the United States Bureau of Mines conducted a study in the Ritz-Canton district of Kansas and were able to make several recommendations as to ways of reducing the possibility of future contamination. Probably the most satisfactory solution is that of returning the brines to subsurface formations. Additional studies of putting salt water back in the underground horizons is encouraged by the report. **Page 27.**

SEVERAL attempts have been made within the past two years to improve the efficiency of steam operated equipment on drilling rigs. Because of these efforts, a drilling rig recently used in Oklahoma is of interest. It included most of the late steam conservation devices and practices developed. A careful check of fuel consumption was kept. A daily average of 192,500 cubic feet of gas was consumed daily. A description of the equipment and hookup design on this rig is of interest. **Page 24.**

The Oil Man's Calendar

FEBRUARY

13 — *American Petroleum Institute Directors, regular quarterly meeting, New York.*

17-21 — *American Institute of Mining and Metallurgical Engineers, New York.*

20-21 — *American Petroleum Institute, Mid-Continent Spring District Meeting, Wichita, Kansas.*

MARCH

19-21 — *American Association of Petroleum Geologists, Tulsa, Oklahoma.*

19-21 — *Society of Petroleum Geophysicists, Tulsa Hotel, Tulsa, Oklahoma.*

APRIL

11-13 — *Petroleum Industry Electrical Association, Tulsa, Oklahoma.*

13-17 — *American Chemical Society, Petroleum Division, Kansas City, Missouri.*

16-18 — *National Petroleum Association, Cleveland, Ohio.*

20-25 — *Oil Equipment & Engineering Exposition, Houston, Texas.*

MAY

13-15 — *American Petroleum Institute, Mid-Year Meeting, Tulsa, Oklahoma.*

13-15 — *Natural Gasoline Association of America, Tulsa, Oklahoma.*

16-23 — *International Petroleum Exposition and Congress, Tulsa, Oklahoma.*

? — *Independent Petroleum Association, Tulsa, Oklahoma.*

JUNE

18-19 — *Pennsylvania Grade Crude Oil Association, State College, Pennsylvania.*

NOVEMBER

9-12 — *American Petroleum Institute, 17th Annual Meeting, Chicago, Illinois.*

Want More Oil

TEXAS OPERATORS ASK FOR A BIGGER FEBRUARY ALLOWABLE

AUSTIN.

PURCHASERS of Texas crude filed nominations for 1,239,427 barrels per day during the month of February at the statewide hearing held in Austin January 16. This compares with a January allowable of 1,015,645 barrels. However, nominations made at the January hearing totaled 1,286,851 barrels, being high because of East Texas operators demands.

Distribution of the Texas February nominations by purchasers was as follows: North Texas, 57,198 barrels; West Texas, 164,728 barrels; Southwest Texas, 114,021 barrels; West Central Texas, 49,106 barrels; Panhandle, 56,243 barrels; East Central Texas, 30,091 barrels; East Texas, 499,870 barrels; Gulf Coast, 268,170 barrels.

An increase of 51,300 barrels daily in the consumer demand for Texas crude during Fevbruary was calculated by the U. S. Bureau of Mines, it was announced at the meeting by the Railroad Commission.

Commission chairman E. O. Thompson explained that he and others had spent the previous week in Washington seeking a revision of the figures issued by the Bureau in an effort to obtain more accurate allocations. He said that the Bureau was now seeking $35,000 from Congress, which would be used to determine the actual amount of oil in storage. For that reason he believes that the threat of 300,000,000 barrels, which is purportedly in storage now, may be removed.

Seek Allowable Change

East Texas operators appearing at the state-wide proration hearing last week renewed the lengthy argument over revision of the method of allocation in the field to include an acreage factor. Major company attorneys, lead by R. E. Hardwicke, insisted that the factor be included.

Opposed to this group were others representing independent concerns. Jack Blalock, Marshall attorney, led the fight against the inclusion of this factor. "The acreage plan is not intended to prevent waste but to stop drilling." Blalock declared. "We should discover if advocates of acreage proration are coming through the back door to stop drilling more wells.

"Proration on the acreage basis is not for the purpose of conservation, but to increase the return on the investment of the advocates of this plan. The only pos-

[*Continued on page 44*]

Fight Price Wars

BILL WOULD STOP PRICE WARS; INDEPENDENT SELLERS PROTEST

WASHINGTON, D. C.

A DOUBLE-BARRELED attack against the major oil companies was launched last week in Congress and at the Department of Justice. At the capitol, Senator Borah of Idaho January 16 introduced a bill outlawing price wars and prohibiting discrimination in price or terms of sale between purchasers of commodities of like grade, quality and quantity, as representatives of the independent oil marketers prepared to confer January 17 with officials of the Department of Justice to ask prosecution of companies which they alleged were seeking to wipe the independents out.

Specific references by Senator Borah to gas and electricity led observers to believe that he had in mind the recent report of the Federal Trade Commission on the natural gas industry, in which price discrimination and price wars have frequently occurred, as well as the oil industry itself, which also has been charged with the same practices. Under his bill it would be unlawful "for any person engaged in commerce, in the course of such commerce: (1) to be a party to, or assist in, any transaction or sale which discriminates, to his knowledge, against competitors or the purchaser in that any discount, rebate, allowance, or advertising service charge is granted to the purchaser over and above any discount, rebate, allowance, or advertising service charge available at the time of such transaction to said competitors in respect of a sale of goods (including gas and electricity), of like grade, quality and quantity; (2) to sell goods (including gas and electricity), in any part of the United States at prices lower than those exacted by said person elsewhere in the United States, for the purpose of destroying competition or eliminating a competitor in such part of the United States; or (3) to sell goods (including gas and electricity), at unreasonably low prices for the purpose of destroying competition or eliminating a competitor." Violation of the provisions of the measure would be punishable by a fine of not more than five thousand dollars or imprisonment for not more than one year, or both.

Charging that the independent oil marketer is being squeezed out of business by major oil producers, members of

a committee from the National Oil Marketers Association accompanied by representatives of the Michigan Joint Legislative Committee which is investigating oil marketing practices in that state urged upon Assistant Attorney General John Dickinson immediate action by the department of justice to determine whether the major companies are violating the anti-trust laws. The delegation charged that the independent is being eliminated by the practices of major producers and refiners who fix prices to the wholesalers and at the same time, through subsidiaries in the marketing field, maintain retail prices which do not leave a sufficient margin of profit for the independent. Evidence has been developed by the Michigan investigation, it was asserted, of specific violations of the anti-trust laws, and members of the committee declared also that further evidence has been secured by Department of Justice agents assigned to make a study of the situation after the association last June called the attention of Attorney General Cummings to their plight, sufficient to justify a grand jury investigation.

Hamon Elected

PRESIDENT MID-CONTINENT ASSOCIATION IN TEXAS

DALLAS.

JAKE L. HAMON, independent operator, who has been active in Texas for several years, was elected president of the Mid-Continent Oil & Gas Association, Texas Division, at a meeting of the board of directors held in Dallas, January 15. Hamon, whose operations extend over several states, recently moved to Texas from Ardmore and succeeds Colonel E. T. Moore of Simms Oil Company, who has been president of the Mid-Continent Oil & Gas Association, Texas Division, for the past several years. A resolution, expressing appreciation for the services of Colonel Moore was passed unanimously.

To Fight Taxes

A special meeting of the membership of the Texas Division of the Mid-Continent Oil & Gas Association has been called to convene at Fort Worth, Saturday morning, January 25. At that time a reorganization of the association will be made for the purpose of presenting a solid front on the part of the oil industry in Texas against the rising tide of discriminatory taxes. Recent utterances by various politicians have indicated that a drive for increased taxes on the oil industry in Texas will be made, having for its purpose the raising of funds necessary to take care of the recently enacted Social Security Act. Taxes of as high as 7½ cents a barrel have been talked and recommended by men who have not been friendly to the oil industry.

JAKE L. HAMON

Oil men from all over the state are invited to attend this meeting, whether they be large or small producers.

The oil men of Fort Worth will provide a complimentary luncheon for those attending the meeting.

A committee headed by W. H. Francis, vice-president of Magnolia Petroleum Company, was appointed by the board to outline a program and plan of activities; project a budget for 1936; and nominate officers, directors and personnel for special committees. The report of this committee will be submitted to the membership in the form of a recommendation.

The Texas division is the oldest oil body in the state and until recent years has been the most active. It has generally refrained from becoming involved in controversial matters within the ranks of the industry, and in line with this policy took no part in the factional disputes that arose from efforts to prorate oil and gas production. The organization is to launch a vigorous campaign against unjust taxation during the current year.

The special committee on reorganization follows: Jake L. Hamon, W. H. Francis, F. J. Adams, Gulf Production Company, Fort Worth; E. H. Blum, Atlantic Oil Producing Company, Dallas; B. C. Clardy, Shell Pipe Line Corporation, Houston; R. L. Dudley, Gulf Publishing Company, Houston; E. J. Dunigan, Jr., Pampa; E. B. Germany, C. & G. Oil Comapny, Dallas; E. M. Freeman, The Texas Company, Houston; Ed. M. Jones, San Antonio; Hiram King, Sinclair Prairie Oil Company, Houston; A. M. McCorkle, Stanolind Oil & Gas Company, Fort Worth; E. L. Smith, E. L. Smith Oil Company, Dallas; Charles P. McGaha, Fain-McGaha Oil Corporation, Wichita Falls; Chas. F. Roeser, Roeser-Pendleton, Inc., Fort Worth; and John R. Suman, Humble Oil & Refining Company, Houston.

Hamon, the new president of the organization, is the son of a former prominent Oklahoma oil producer, railroad builder and politician. First hand knowledge of the oil producing branch of the industry was gained through accompanying his father on field trips between sessions at school. Upon completion of his education, young Hamon set out to attain his mark by acquiring stripper well production. Some of his first purchases were made in the Ranger, Texas, district, an area popular with his father. Other purchases were made in Oklahoma. He is now associated with Edwin B. Cox, and they own producing properties in Oklahoma, Southwest Texas, East Texas and North Texas. He is 33 years old, and holds the distinction of being the youngest member of the board of directors of the American Petroleum Institute, having been elected at the last annual meeting of the Institute, which was held in Los Angeles, November, 1935.

ANNOUNCEMENT

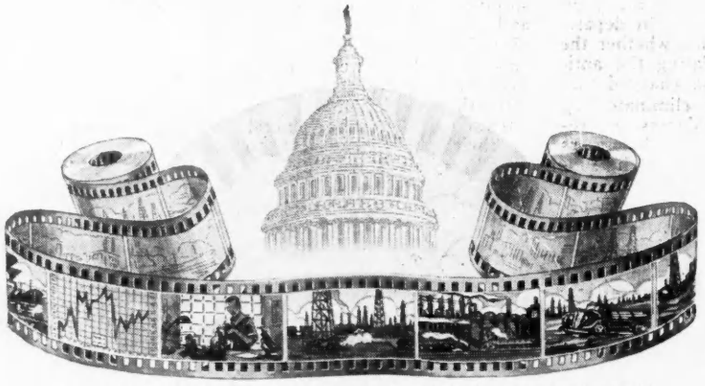
Several articles on

drilling MUDS

are to appear soon

ONE of the most important and interesting research problems before engineers is that of mud laden fluids, their proper mixing, care, etc. Realizing the interest in this subject, **THE OIL WEEKLY** announces with pleasure the coming publication of several articles that have been prepared by M. T. Halbouty, chief geologist and engineer for Glenn H. McCarthy, Inc., who has been associated closely with mud studies for many years. These articles will cover many of the outstanding operating problems, and will be featured by an article on the proper use of drilling mud when in heaving shale.

The Changing Panorama



THE OIL WEEKLY'S COMPOSITE VIEW OF INDUSTRY

Edited by L. J. LOGAN, Associate Editor

ALTHOUGH the petroleum industry has had favorable operations and bright prospects for months, the fact apparently did not get over generally to investors and others until the past 10 days or so. Then the crude price increases throughout the country and the subsequent improvement of gasoline prices precipitated a buyers' rush on oil company securities.

Oil Shares Higher

Some of the lower priced shares have about doubled in market value within recent weeks, while gains of around 50 percent have not been uncommon, even for medium priced stocks.

Whereas some of the oil shares previously had been bobbing up and down, last week they seemed to be coming in fast and high on the recovery tide, like a surf board rider rushing into shore.

It is a fact, of course, that something goes wrong sometimes in surf board riding, and instead of gliding smoothly on, the board noses downward and plunges the rider so far beneath the surface that it takes a long time to swim back up. On the other hand, the ride to shore sometimes is uninterrupted. This being no stock market analysis, no opinion is offered as to which way the oil share prices will go from here.

Markets Improve Generally

The oil industry's markets, from well to service station, showed further improvement during the past week, in the wake of the crude price raising that started in Texas January 9.

Crude oil prices were advanced 10 cents a barrel in Michigan January 14, the new price of $1.32 a barrel being the highest for five years. On the previous day Pennsylvania grade crudes were boosted 15 cents a barrel, after having been raised similar amounts several times in the latter part of 1935. Allegany and Bradford district crudes now are priced at $2.45 a barrel.

These increases rounded out gains in crude prices throughout the country outside California, the increases of January 9 and 10 having embraced Texas, Louisiana, Arkansas, New Mexico, Oklahoma, Kansas, Kentucky, Illinois, Indiana, Wyoming, and Montana. Although California failed to share in the recent increases, the crude prices in that state at least virtually recovered in the latter part of 1935 from the drastic reductions of late August, 1935. Furthermore, excessive crude production has stood in the way of any crude market improvement in California.

Gasoline Prices Raised

The gasoline market has responded readily to the crude price gains of the past 10 days. The gasoline tank car prices east of California have improved one-quarter to one-half cent a gallon; and tank wagon and service stations prices of gasoline have been increased one-quarter to one cent per gallon.

Effective January 17 Standard Oil Company of Indiana advanced its tank wagon and service station prices of gasoline and naphthas one-half cent a gallon at all points in 10 Middle Western states. Retail prices on gasoline were raised a full cent a gallon throughout Texas soon after the 10 to 15 cent crude price increases occurred, and a one-cent increase also has been made in other areas, including Wyoming.

In the Middle Atlantic states Standard Oil Company of New Jersey at the middle of the past week raised its gasoline prices one-half cent a gallon in tank cars, tank wagons, and at service stations. Socony Vacuum Oil Company made a quarter-cent increase, covering all methods of delivery, in New York and the New England states.

So far, the Mid-Continent gasoline tank car market has held steady in the face of the fact prices were advanced sharply just after the crude price increases. At refineries in the Group Three (Oklahoma) region and in North Texas, third grade U. S. motor gasoline, below 62 octane, was priced last week around 5¼ cents a gallon, or one-half cent more than before the crude price increase. Similar improvement occurred in the East Texas refining district, the price rising to around 4⅝ cents on material supported by federal tenders.

Last week also brought increases of one-fourth cent a gallon in tank car prices of kerosene and fuel oils.

These higher tank car prices compensate refiners for the increased prices they must pay for their raw material.

Lower California Production Sought

Although California has been the bad boy of the industry in recent months, as regards crude oil produc-

HERE ARE *Extra Profits*

Thousands of runs under every field condition imaginable have proved the safety and efficiency of the Baker Wall Scraper.

BLADES ALWAYS CLOSE

The blades close downward into the body when their work is done, but if a piece of rock or steel should keep the blades from closing, they will shear through any such obstruction when the top of the blades contact the casing shoe while coming out of the hole.

SMALL, SAFE O. D.

In event a weak drilling string should twist-off, it is easy to wash-over a Baker Wall Scraper because its body O.D. is no greater than the tool joints above.

GREAT REAMING CAPACITY

All Baker Wall Scrapers have unequalled capacity for expansion. For example: the No. 6 size runs in through 9⅝" A.P.I. Casing and then reams any desired diameter from 9¼" to 19" depending upon the size of blades used.

COMPLETE SAFETY

The strong body construction, and blades of chrome vanadium steel insure operating safety—in fact we have no knowledge of a failure of any Baker Wall Scraper.

BAKER OIL TOOLS, INC.
POST OFFICE BOX 609, HUNTINGTON PARK, CALIFORNIA
COALINGA • TAFT • HOUSTON • OKLAHOMA CITY • TULSA • NEW YORK

There are so many ways in which the Baker Wall Scraper will make *extra* profits for you that it should be available for every drilling well. Resourceful operators and engineers immediately will recognize savings and profits to be derived from the following advantages:

Bringing in and Cleaning Up the Well—

The tendency of rotary mud to plaster the walls of the hole is well known. The Baker Wall Scraper is ideal for removing all rotary mud and other substances from the face of the oil sand and enlarging the area of the sand body to obtain maximum production. Many wells are brought in more easily and in less time when the oil sands have been thoroughly scraped.

Straightening Crooked Holes—

For starting a wide shoulder as the first step in bringing a crooked hole back to vertical, great expansion at any desired point is an exclusive advantage of the Baker Wall Scraper. For example, in the larger sizes it is possible to cut a square shoulder with a width equal to the diameter of the hole being drilled.

Underreaming Greater Clearance for Liners and Casings—

Larger sizes of liners can be run where the hole has been underreamed, and turning down of couplings on liners can be eliminated. Liners can be pulled easily from holes enlarged with the Baker Wall Scraper.

It is often possible to overcome a miscalculation in casing programs, or rectify unavoidably "tight holes" by underreaming to a sufficient diameter to permit setting a larger size of casing than otherwise would be possible.

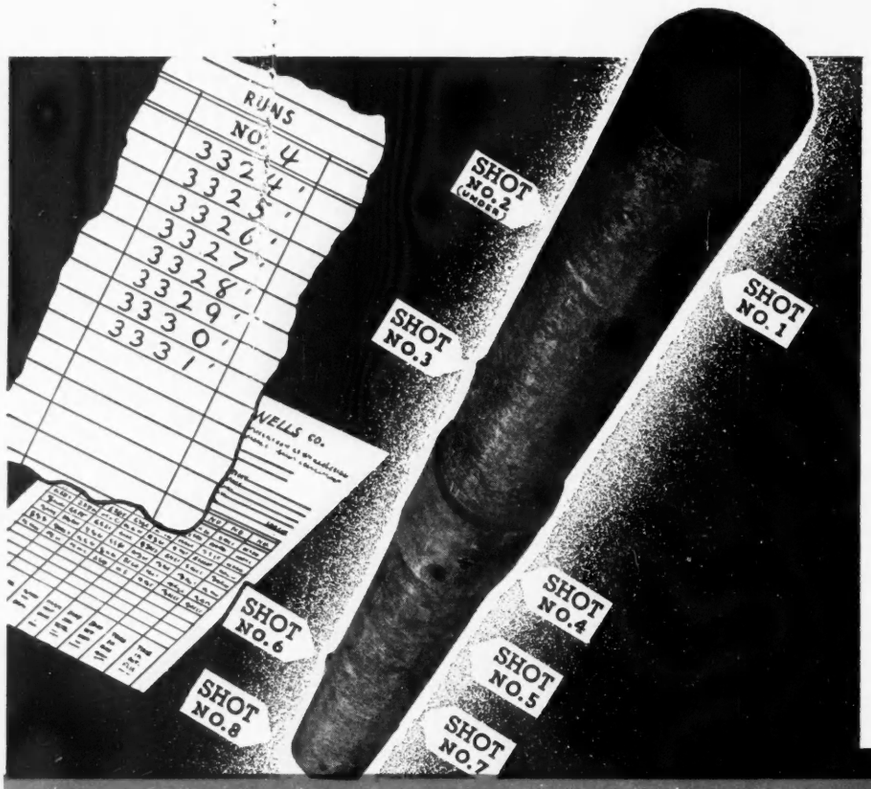
Underreaming as an Aid to Cementing—

Complete distribution of cement around the shoe joint and a better bond with the formation can be secured by underreaming the last 20 to 40 feet from the bottom before introducing the casing. This practice leaves the smaller originally drilled hole in which to center the lower section of casing suspended in the underreamed cavity. A cavity can likewise be formed in any part of the well which is to be cemented, such as when shutting off intermediate water.

OTHER USES . . .

. . . together with details of construction and complete specifications are on pages 168 to 216 of your 1936 Composite Catalog; also in the large free Baker Catalog gladly sent on request.

BAKER ROTARY WALL SCRAPER



• AT THE LEFT is an unretouched photograph of a section of 6⅝"-26-lb. casing recently pulled from the well of a major oil company after Gun-Perforating below 3300 feet and sent to us by company officials...Note clean, round-hole perforations and accuracy of spacing at one-foot intervals. . . Interesting proof of our accurate shooting, even though Gun Perforator was in motion and shots were individually fired...Note also distribution of shots around casing, making good drainage area on all sides.

ACCURACY

• THE ACCURATE perforating of oil well casings . . . only a dream of a few years ago . . . has at last become a reality, due to patient research by Lane-Wells engineers.

• TODAY you need not trust your well to the greedy fingers of Chance. . . Cold, hard, never-varying Accuracy has taken its place. . . Every shot fired by the Lane-Wells Gun Perforator is spotted by DEPENDABLE electric control devices which reduce human fallibility to the very minimum. . . Cable stretch is practically eliminated by placing our Gun Perforator Truck at least 150 feet from the well, thus taking out stretch before cable reaches "zero" measuring point on our special sheave assembly.

• GUN PERFORATOR ACCURACY has been PROVED time and again by examining sections of casing as above; also by checking bottom with drill pipe and sand line measurements, in wells from 2000 to 9000 feet in depth. . . Just one more reason why Lane-Wells Gun Perforator Service has become standard practice with hundreds of oil companies. Consult the Lane-Wells office nearest you for details.

NOTE: Devices used and Method of Operation are fully protected by U. S. Patent No. 1,582,184 issued April 27, 1926, and other U. S. and Foreign Patents Pending.

One of the fleet of Lane-Wells Service Trucks that bring full Gun Perforating equipment right to your well.

Tomorrow's Tools Today!

THE LANE-WELLS CO.

Gun Perforator Service

LOS ANGELES • HOUSTON • OKLAHOMA CITY • TULSA • NEW YORK

tion, special efforts have been made lately toward bringing about a reduction of the state's output.

The goal is a cutting of the production about 75,000 barrels daily, or to around 600,000 barrels per day, by about January 20. Work toward this end is being done by the Central Committee of California Oil Producers.

The efforts to reduce California's crude production are being spurred on by the urgent need for stabilizing the gasoline market of the region. Even if the attempts to lower the crude output prove only partially successful, the gasoline market is expected to react favorably.

West Coast Retail Prices Low

In Southern California the major companies reduced retail gasoline postings two cents a gallon on all three grades about 10 days ago, in order to meet competition. The majors are selling the third grade at 11½ cents at the service stations, including four cents for taxes. The independents meanwhile are selling similar material at 9½ to 11½ cents. These prices are about as low as the postings have ever been during periods of instability in the past several years.

As inducement for the California producers to cooperate in reducing crude output, it has been hinted that the major companies might soon reward such curtailment by moderate raising of crude prices in the near future.

Oil Sanction Efforts Cool

Efforts to establish an oil sanction against Italy seem to have become luke-warm during the past week. Britain now takes the stand she is willing to proceed with efforts to get the sanction established—if the League of Nations is willing. Considerable interest will be attached to the meeting of that body January 20, when, if precedent can be used as a criterion, the League again may procrastinate when faced with a demand for a definite decision of action on the oil sanction problem.

Price Gains Stimulate Prospecting

Higher crude oil prices have favorably affected field development in the most active producing districts, as reflected by increased leasing activities and higher lease prices. Further development in the proven fields and a gradual expansion of wildcat drilling will feature extensive operating programs already outlined by the larger operating companies in California, the Mid-Continent and along the Gulf Coast. The crude oil price increases came at a time when many companies were outlining programs for the development of larger reserves.

Wildcat acreage is in demand in a number of producing districts, a condition that usually precedes extensive drilling operations in unproven areas. Where reserves have waned during the past two years, the necessity for the discovery of new fields is obvious. Districts that have yielded a large number of new fields are directly in line for even more extensive drilling operations because of those discoveries. It is reasonable to assume that drilling will continue in areas that have made the best showings during the past year.

Much Drilling Likely

Drilling appears due to continue on a large scale until two or three major discoveries are made. The present oil reserves are adequate for needs of the immediate future, but failure during the past few years to find as much new oil as has been consumed has created a healthy condition that will not be removed so long as reserves in sight are on the decline. Higher crude oil prices merely stimulate the drilling activity that had previously gained considerable momentum.

California does not have a heavy oil reserve in sight and drilling is due to increase until a major discovery is made. Ventura Avenue and Kettleman Hills were the last important fields opened, and the seven-year period that followed has accounted for only a few secondary fields.

Several other districts, including West Texas, Kansas, parts of Oklahoma and New Mexico are in line for at least a continuation of the present drilling programs. North Louisiana and southwest Arkansas have been favorably affected by higher crude oil prices and many wildcat structures will be drilled this year.

Marketing Code Meeting Planned

Consideration of a marketing code moved a step nearer reality last week when a committee of independent refiners issued a call for a conference in Chicago. No date has been set.

This code has been written since last June, and has been discussed before conventions of jobbers. Its last presentation was before the annual meeting of the American Petroleum Institute at Los Angeles.

Independent refiners desire associations of jobbers to send delegations. They have asked integrated concerns to have representatives at the meeting. Independent refiners, of course, will be on hand.

This code proposal followed invalidation of NRA. As it has been presented since the rules were written, it has met both praise and condemnation. Jobbers have been wary of another set of rules for the marketing of petroleum products. These rules make no mention of the lease and agency form of sales contract. That is the defect as jobbers see it.

Condemnation of the code, however, has not been unanimous among jobbers. Many believe in a code, although few have approved the set of rules that will be offered by the committee that drafted the proposed regulations.

A code meeting in Chicago promises long bickering, with possibilities that differences in opinion may leave the drafting of a simple set of rules impossible.

Higher Texas Allowable Urged

Bottom-hole pressure, that delicate and disputed barometer by which East Texas is judged, declined 5.4 pounds between December 12 and January 12. This was brought out in the testimony of V. E. Cottingham, geologist of the Texas Railroad Commission, before which representatives of the industry appeared last week to appeal for increased production of Texas oil fields.

Texas purchasers filed nominations that would take care of output of 1,239,427 barrels daily. Of this they wanted 499,870 barrels daily out of East Texas and 268,170 barrels out of the coastal fields.

Indicated consumer demand, as prepared by the United States Bureau of Mines, set out that an increase of 51,300 barrels daily could be added to the output for Texas fields.

The hearing was a continuation of the argument between those who favor acreage as a basis for proration and those who favor the number of wells as the basis for fixing output.

All in all it looked like a boost for output with the writing of another order of proration for Texas.

MEN IN THE INDUSTRY'S NEWS

C. P. DIMIT, vice president in charge of production for Phillips Petroleum Company, is on a combination business and vacation trip to California.

A. E. WALLACE, Western Gulf Oil Company, at a recent meeting of the wildcat committee of the California Oil & Gas Association, was elected chairman, succeeding Joe Dunn, National Supply Company of California. Dana Hogan succeeds Wallace as vice chairman, and Frank Morgan, Rio Grande Oil Company, is the new treasurer, succeeding Lloyd Bryant, Standard Oil Company.

W. B. PARDOE, independent operator of Alma, Michigan, accompanied by his family, is spending the winter season at Miami Beach, Florida.

J. W. BRADBURY, general agent of Mexican Gulf Oil Company at Tampico, completed 25 years' continuous service with various subsidiaries of Gulf Oil Corporation of Pennsylvania on January 11. In honor of the occasion, he was host at a dancing party that evening at the company's club house at Prieto Terminal which was attended by all of the employes of Mexican Gulf Oil Company and their families, about 150 persons being present.

J. E. SCHULTZ, geophysicist of Tyler, has moved his headquarters to Corpus Christi.

M. H. GOODE, manager of the land department, has been placed in charge of Rancho Company's new West and Southwest Texas division. The company has opened offices in the Milam building, San Antonio. L. B. Herring is chief geologist for the division.

R. E. COLLOM, in charge of California operations for Continental Oil Company, flew to Texas last week on business.

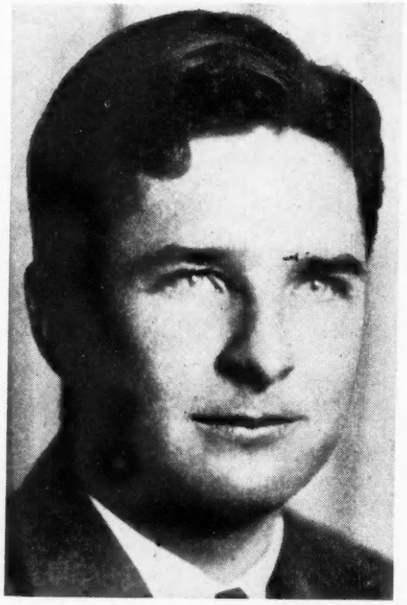
CHAS. V. C. BRADLEY, field superintendent for Magnolia Petroleum Company it Davenport, Oklahoma, district, has been placed on the retired list. His services with the company began in 1917, and prior to that date he was with the South Penn Oil Company in West Virginia. Harvey Lee, superintendent at Cushing, has been assigned the Davenport district.

H. A. WILSON, Superior Oil Corporation, Tulsa, was installed as the new president of the Purchasing Agents Association of Tulsa at the association's regular meeting on Tuesday evening, January 14. Other officers are: C. M. Taylor, Indian Territory Illuminating Oil Company, first vice president; M. F. Bridges, Tide Water Oil Company, second vice president; V. W. Bailey, Taubman Supply Corporation, secretary-treasurer; H. F. Stover, Gaso Pump and Burner Manufacturing Company, national director; H. M. Cosgrove, executive secretary; and E. R. Welch, assistant secretary.

CHARLES R. KELLY, terminal superintendent of Mexican Gulf Oil Company, has returned to Tampico after a vacation spent with relatives at McAllen, Texas.

GULF COAST SECTION OF AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS IS ORGANIZED

T. V. MOORE IS ELECTED FIRST CHAIRMAN OF ORGANIZATION



T. V. MOORE

THE recently organized Gulf Coast Section of the American Institute of Mining and Metallurgical Engineers January 13, elected T. V. Moore, Humble Oil & Refining Company, Houston, as its chairman. Moore has been active in the petroleum division of the Institute for many years. The purpose of the Gulf Coast Section is to act as a clearing house for teehnical data, and it is planned that luncheons will be held each month, following which one or more papers will be presented and discussed. All A.I.M.E. members, whether affiliated with the oil business or not, are specially invited to join the new section, and arrangements may be made whereby associate memberships will be available to non-members who are interested in engineering and scientific developments.

Other officers elected were as follows: vice chairman, E. E. Rosaire, Geophysical Research Corporation, Houston; secretary and treasurer, Alexander Deussen, consulting geologist, Houston. The board of directors is composed of four members, two of which will serve for two years and the other two for one year. The members of the board of directors are: Chase Sutton, Pure Oil Company, Houston; G. B. Corless, Humble Oil & Refining Company, Houston; E. L. Porch, consulting geologist, San Antonio; and H. W. Fletcher, Hughes Tool Company, Houston.

C. H. WRIGHT, president of Sunray Oil Company, has returned to Tulsa after a business trip to New York. Wright was receiver for Sunray during its period of receivership.

K. S. FERGUSON, geologist with Shell Petroleum Corporation, Wichita Falls, has been transferred to the geological department of that company in San Antonio.

HARRY H. ARNOLD, JR., who until recently was district geologist for The Texas Company at Shawnee, has been transferred to division headquarters in Tulsa to become assistant to J. N. Troxell, division chief geologist. Arnold succeeds Glenn S. Dille, who recently resigned to enter consulting practice in Tulsa. Ed Dawson was transferred from the Wichita, Kansas district, to fill the Shawnee office. Other additions and transfers in the geological staff include the transfer of F. B. Notestein from the Houston district to become field geologist in the northern Mid-Continent and F. E. Mettner, paleontologist.

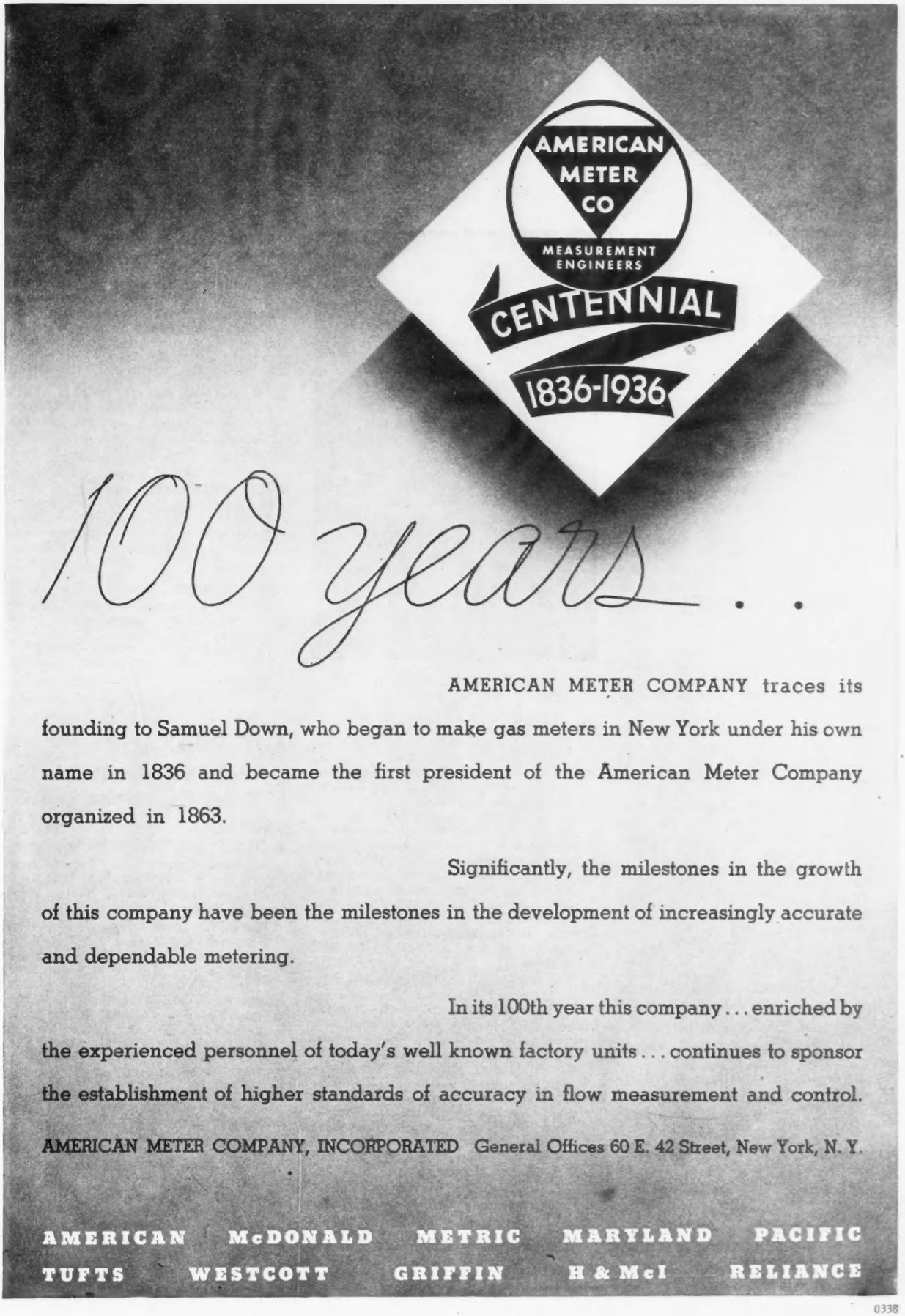
RUSH GREENSLADE, vice president and manager of Gypsy Oil Company, is expected to return to company headquarters about January 20, following a visit to the Gulf headquarters in Pittsburgh, Pennsylvania.

GLENN GARRETT, head of land and scouting for Gulf Production Company in the Fort Worth division, visited the active areas in West Texas and the Panhandle last week.

JOHN W. CRAM, scout for Continental Oil Company in North Texas, has been transferred from Wichita Falls to Amarillo to report on the Texas Panhandle, where the company has large oil and gas holdings. Cram has been succeeded at Wichita Falls by W. C. Mitchell, who was formerly in the geological department.

JOSEPH KILCHENSTEIN, superintendent of production for Magnolia Petroleum Company in the Texas and New Mexico division with headquarters at Dallas, visited active areas in Southwest Texas the past week.

WILLIAM H. CURRY, JR., with Shell Petroleum Corporation for the past eight years has resigned to take a position in the geological department of Santa Clara Oil Company (Atkins & O'Neil), San Antonio. Curry is well known in the Gulf Coast area, having been in both the Houston and San Antonio offices of Shell Petroleum Corporation. Santa Clara Oil Company's expansion has been required as a result of its two important



AMERICAN METER COMPANY traces its founding to Samuel Down, who began to make gas meters in New York under his own name in 1836 and became the first president of the American Meter Company organized in 1863.

Significantly, the milestones in the growth of this company have been the milestones in the development of increasingly accurate and dependable metering.

In its 100th year this company . . . enriched by the experienced personnel of today's well known factory units . . . continues to sponsor the establishment of higher standards of accuracy in flow measurement and control.

AMERICAN METER COMPANY, INCORPORATED General Offices 60 E. 42 Street, New York, N. Y.

AMERICAN McDONALD METRIC MARYLAND PACIFIC
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0338

EDWARD T. MOORE ROSE FROM MULE-DRAWN STREET CAR DRIVER TO AN OIL COMPANY EXECUTIVE

discoveries in South Texas last year, one being the Government Wells sand production in the Seven Sisters field, Duval County, and the other opening of Clara Driscoll field, Nueces County.

H. E. DOUDRICK, president of Big Indian Oil & Development Company with headquarters at Kansas City, Kansas, was a visitor in Fort Worth late last week. The company scored the first commercial oil producer in Cooke County, Texas, and is contemplating additional exploratory work in the county.

FRANK GARDNER, former chief engineer for Simms Oil Company, Dallas, has been engaged by the First National Bank, Dallas, to organize and take charge of a valuation department devoted to oil and gas properties. Gardner resigned from the former concern last year when Tide Water Oil Company acquired stock control. He was with the company about 15 years, and previously was an engineer for the Stone & Webster Engineering Corporation.

A. I. LEVORSEN, president of the American Association of Petroleum Geologists, discussed, "Time of Migration and Accumulation", on Monday, January 13, at the regular monthly meeting of the Oklahoma City Geological Society.

CHAS. A. SON, independent oil operator of California, and a practicing attorney at Los Angeles, has been appointed to the California Industrial Accident Commission.

GUY L. WARREN, president of Rewar Oil Company, Corsicana, has moved to Corpus Christi, Texas.

DR. R. J. RUSSELL, Louisiana State University, discussed the deltas of the Mississippi River, a geomorphological study, at a special evening meeting of the Houston Geological Society at the Houston Public Library, January 16.

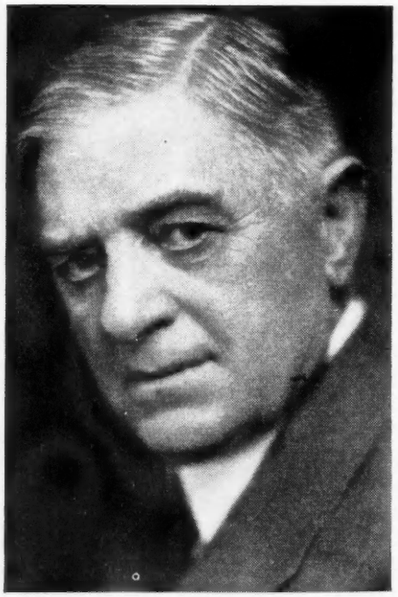
E. B. STILES, former member of the joint account geological staff of Tide Water Oil Company and Seaboard Oil Corporation in Cayuga and Long Lake fields, East Texas, has been engaged by the latter in connection with the drilling of its Ordovician lime test in Hamilton County, Texas.

ADRIAN CORBETT, director of Anglo-Saxon Petroleum Company, Ltd., has returned to his office in Great St. Helens Court, London, after having been laid up for some time as a result of a hunting accident.

ROBERT L. CANNON, San Angelo consulting geologist, spent several days last week in Dallas and Fort Worth, renewing old acquaintances.

DR. IRVIN PERRINE and Dr. Joseph B. Umpleby, consulting geologists and independent operators of Norman and Oklahoma City, are on a trip into northern Mexico.

» IN THE FUTURE WILL DEVOTE MORE TIME TO HIS MANY PRIVATE ENTERPRISES «



EDWARD T. MOORE

EDWARD T. MOORE, executive head of the Simms Petroleum Company and subsidiary units since June 1, 1920, and president of the Texas division of the Mid-Continent Oil & Gas Association for the past six years, has relinquished both positions to devote more time to his private enterprises and to serve as president of the Dallas Chamber of Commerce. Moore was virtually drafted for the latter position, as he is recognized as a leader in oil and civic circles, and the commercial body is entering its biggest year since Dallas is headquarters for the Texas Centennial celebration.

Simms Petroleum Company has been in process of liquidation since the sale of the principal assets of its operating subsidiary, Simms Oil Company, last June, to Tide Water Oil Company. Board of directors of Simms Petroleum Company acted upon Mr. Moore's request to be relieved as president and the responsibilities of carrying out the liquidation, naming A. J. Williams, former vice-president and secretary, as president. However, Moore retains his board membership, and was conveyed the honor of being elected chairman.

Born on a farm in White County, Tennessee, Moore bade farewell to his rural surroundings in 1887 and made his way to Dallas, where he obtained employment driving mule-drawn street cars. He was advanced to car barn foreman, then cashier, and in 1889 resigned to spend two years at college. He resumed work with the Dallas Street Railway Company upon the completion of his course. After a series of promotions, was made general manager, a position held when the Stone & Webster Interests acquired the Dallas transportation and the electric utility system. He was retained by the new owners and placed in charge of both utilities until ownership changed hands in 1917.

Attracted by the opportunities offered by the oil business in Texas, he operated independently and later in association with Stone & Webster Interests. The latter acquired control of Simms Petroleum Company, and in June, 1920, Mr. Moore was placed in charge as president. The company enjoyed a healthy growth for more than a decade, and was operating in all phases of the business with no outstanding obligations and cash on hand when the offer made by Tide Water Oil Company was accepted by the board then by the stockholders.

T. R. BANKS has resigned as district geologist in North Texas for Magnolia Petroleum Company, and will enter consulting work. He will continue to live in Wichita Falls.

C. L. PATTERSON, president of Patterson Ballagh Corporation, accompanied by J. M. O'Melveney, Mid-Continent representative of the company, is touring the Gulf Coast and Mid-Continent fields.

CARL HUBBELL, famous pitcher for the New York Giants, is reported to have been having considerable success dealing in leases and royalties in central Oklahoma counties. Hubbell's home is at Meeker, in southern Lincoln County, Oklahoma.

ADD DIRECTORS

Eight members added to Tulsa Exposition board

TULSA.

EIGHT new directors have been added to the board of the International Petroleum Exposition according to an announcement by W. G. Skelly, president.

The eight are: Allmand M. Blow, vice-president, Amerada Petroleum Corporation, Tulsa; C. W. Flint, president, Tulsa Rig, Reel & Manufacturing Company, Tulsa; L. S. Gregory, consulting engineer, Tulsa; Ed. H. Moore, independent oil operator, Tulsa; P. C. Lauinger, president Oil & Gas Journal; George Parker, president, Lewis Production Company, Tulsa; and Jay P. Walter, National Tank Company, Tulsa.

There are eighty-one directors representing both independent and majors and the various fields of the industry including prospecting, production, transportation, refining and marketing.

The Exposition is run as a non-profit institution by the oil industry through these directors and the executive committee.

Clyde H. Pape, a director has also been made treasurer for the coming May 16 to 23 Exposition.

MEANS EMPLOYED IN PECHELBRONN FIELD FOR

Detecting Oil Horizons

INCLUDE A CAREFUL STUDY OF MUD CUTTINGS

By I. HONTCHARENKO, Engineer
Pechelbronn Oil Company

ANY discussion regarding determination of location and characteristics of producing horizons in the Pechelbronn oil fields of France should be introduced by a general statement that producing formations there are shallow, lenticular, and subject to dislocation present in subsurface conditions in a field which has many cross-faults. Likewise, it should be brought out that the normal rock pressure in wells drilled thus far in the field has been lower than the opposing pressure carried by the column of mud used in drilling. Thus exposed to the pressure from the column of mud, the result locally is that the oil does not flow naturally from the reservoir sand.

It is generally accepted as one of the fundamentals of successful completion methods that a properly conditioned mud should have no detrimental effects upon the exposed wall of the producing horizon. But even when one has done one's best in Pechelbronn to complete in a manner to assure a flowing well as the result, it is often necessary to bail out considerable quantities of mud to release the virgin flow of pressure and the oil carried with it. In extenuation, it should be explained that the percussion system of drilling prevails here, a condition which means that drilling is carried on with the hole full of mud.

In a lensed, faulted area accurate determination of location and characteristics of producing horizons is dependent upon complete records and utilization of those records to the fullest extent.

Bailing Tests

Bailing tests provide the common means of determining oil existence, source and relative productivity of that source in Pechelbronn. The practice here is to bail until the initial appearance of oil from the reservoir takes place and to continue bailing until the level of the mud column is lower than the head of the oil. Normally, the time required in bailing tests runs to about two hours. Occasionally, however, bailing is necessarily prolonged for a matter of hours, sometimes as much as one or two days. Early results of bailing generally produce a sort of emulsion, that is, a stiff mixture of mud, oil and gas. Recovery of uncontaminated oil comes later.

As applied locally, the bailing method has two advantages, viz: it approximates perfection in effective, positive determination of the presence or absence of an oil bearing formation; and, simultaneously, it allows one to determine the relative productivity of that formation.

There are certain disadvantages to the bailing method, too. This method requires shutting off the top water and does not give exact information (in feet and inches) concerning the vertical location, or thickness, of the oil bearing formation. Actually, it merely allows one to assume that the possible range of the true position of the reservoir sand is equal to the difference, expressed in vertical feet and inches, between the bailing test that was productive and the one which was not productive. Then, the operator is restricted to knowledge that the sand is somewhere within this gap. Exactly where it is within the gap the bailing test does not reveal.

Adsorption a Hindrance

If one observes carefully, an irridescent film is often faintly visible on the drilling fluid when the bit is penetrating an oil bearing stratum. Nevertheless, this appearance is so inconspicuous that it is rarely noticed until it has been in the fluid for some time. This is not due so much to a high degree of dilution, but it is due rather to the adsorptive qualities of clay suspended in the mud. The initial oil coming to the surface is so thoroughly adsorbed by these fine particles of clay that it is not discernible except upon very close scrutiny. Hence, the need of a careful test to determine the existence of the oil before its presence becomes obvious at a glance if a correct logging of the sand is desired.

Capacity of the mud for adsorption depends upon the following conditions:

(a) *Fluidity and specific gravity of the oil.* Fluid and light oil is adsorbed more easily than heavy, viscous oil. (When the oil is heavy, the showings in the mud are always good, i.e., very easily observed).

(b) *Property of the mud.* As a general principle it will work out that the degree of adsorptive power of a mud increases with the colloidal matter in the mud. In other words, a mud with more colloidal properties is capable of a greater degree of adsorption than a mud with fewer colloidal properties, or matter.

While we are often handicapped here by the difficulty encountered in observing the initial appearance of oil in the mud, the arrival of gas at the surface facilitates things. Gas dissolved under pressure of the mud escapes and reaches the surface in the form of bubbles, warning the operator to suspect and anticipate the initial appearance of oil. This occurrence indicates accurately enough for practical purposes the depth of the oil horizon, if there is only one oil horizon. But, it does not give any idea of the relative productivity of that particular horizon.

Cuttings Important

When there are many strata of oil producing sand the operator must be provided with samples of formation carried to the surface by the stream of pumped

mud. These must be tested, as well as those brought up by drilling tools: cores, bits, bailers.

Cuttings play an important role in determining subsurface conditions at Pechelbronn. Separation of them from mud is done by means of sieving decantation. The process is as follows:

Mud comes from the bore to a "trommel" provided with a wire gauze. The jet, or stream, of mud falls upon paddles arranged so that uninterrupted power for the trommel is established without need of auxiliary power. The end of the paddle-motivated axle is equipped with cams which impart to the apparatus three strong jolts per revolution. Cuttings, retained in and on a filter, are gathered in a box and washed. After the larger cuttings have been extracted, the mud is sent into a slopping channel with baffle bends, where it deposits by decantation a portion of finer particles which have passed through the screen and thereby eluded the filter.

Cuttings brought up with the mud are separated into three types:

(1) The coarser ones, which are kept on the sieve by a simple filtering process.

(2) Those which, being a little finer, are left in the bends of the slopping channel.

(3) Those which, being excessively fine, are retained in suspension by the colloidal mud.

Cuttings of the first type are the best for use as formation samples, even though they do not represent with absolute precision the succession of the formations. A certain unavoidable mechanical alteration in the classification or sequence of cuttings is effected during the trip from the bottom of the hole to the surface. Moreover, in an uncased well the shock of drilling pipes against the wall breaks off particles of formation to confuse the mud sample analyst. More attention should be paid, in this connection, to the appearance of new rock fragments in the samples than to the proportion of each rock type. (It is the practice here to collect the samples every 30 minutes and keep them at the well until the geologist comes to take them to the laboratory).

Well being drilled by percussion-slush method on the outskirts of the Pechelbronn field, France.

Reversed Circulation

While identification of ordinary compact formations is not difficult, recognition of the friable oil rocks is a more delicate proposition. Frequently it happens that these strata do not contribute any clue or trace to the samples. The primary reason for this is that the grains of sand are lost in the mass of marl cavings or enveloped in the mud to such an extent that one can not find them in the first and second types of samples classified above. Sometimes also the oil characteristics of the sand may pass unobserved on account of adsorption by the drilling mud of oil particles coating the grains of sand. This calls for microscopic examination of the grains to determine the existence of oil spots in the corners and in the hollows, or concave recesses, in the grains of sand.

Because of the handicap placed on sample examination by the function of adsorption, it is good practice to minimize the period of time over which adsorption can take place. This is accomplished at Pechelbronn by drilling with reverse circulation. By this expedient, cuttings are not brought to the surface through the annular space between the drill pipe and the wall of the well, but they are brought up through the inside of the drill pipe and are not crushed or brought in contact with the mud for a long period. Data obtained from samples brought up in reversed circulation are often superior to those obtained with cores. This system, reversed circulation, is especially applicable in wildcat operations over here.

One of the main advantages of this method is that, in case of a positive result, the oil horizon's position is fixed with precision.

Disadvantages

There are some disadvantages also. In many, though not the majority, of instances, it is difficult to observe the oil rock because of the mud's adsorption. A negative result by this method does not prove the absence of an oil bearing formation. Furthermore, when the position of the stratum has been determined, one still lacks definite information concerning the relative productivity of that stratum, and it is necessary to resort to the procedure of shutting off top water and bailing.

My organization, Pechelbronn Oil Company, uses the well known electrical method for determining porosity and resistivity. Electrical coring, based on our experience, appears to have the following advantages: (1) It gives the exact position and thickness of the oil horizon. (2) It gives certain knowledge of the productivity of the bed, if it is thick enough. (3) It is much quicker than mechanical coring.

The Pechelbronn drilling and geological service correlates all the above means of detecting the producing horizons. If it needs to ascertain the presence of an oil bearing formation and its richness, the bailing test is used. The other means outlined are used as complementary studies to determine the position of the stratum, its thickness and its petrographic nature. Since no one method is infallible and omnipotent, the use of two or three methods gives more accurate information.

Reference: R. Schnaebele, Geologue—Ingenieur a Pechelbronn. "Les Moyens De Deceler Les Couches Petroliferes Dans Les Sondages a Pechelbronn." Science et Industrie No. 239 bis—1933.

Deep Possibilities of the Gulf Coast

OFFERS WIDE RANGE OF OPPORTUNITIES FOR DEVELOPING FUTURE OIL RESERVES

By BRAD MILLS, Associate Editor

THE Texas-Louisiana Gulf Coast offers unusual opportunities for development of oil at record depths. The great thickness of favorable formations, good drilling conditions, and a probably high percentage of producing structures below 8000 and 10,000 feet place the district in a very strong position for testing levels formerly regarded as prohibitive. Few sections of the world are favored with a comparable thickness of sediments that definitely fall in the productive classification, and intensive development in the future will undoubtedly result in the discovery of many fields in areas that have been shallow producers for 20 or 25 years. The wide range of opportunities and continued success of operators who are confining their activities to deeper prospects have attracted the attention of producing companies of every size.

With a program calling for development of a large production of oil below 8000 feet, an operator has the choice of several methods of attack. The two principal sources of deep production along the Gulf Coast are the deeper and untested formations around known salt domes, and formations lying above the deep seated salt domes. There is practically no limit to the depth of zones or formations that should prove productive along the coastal strip between New Orleans and Matagorda County, Texas.

Salt plugs, both sharp and blunt, were no respecter of formations. They apparently intruded to all levels above 15,000 feet below the surface, and were not at all particular about a stopping point. The fact that the tops of salt plugs along the Texas-Louisiana Gulf Coast have been found in the Recent, Pleistocene, Pliocene, Miocene, Oligocene and Eocene ages indicates that the very deep seated salt domes may prove the source of a great future oil supply. Already the intermediate type of deep seated salt dome has become an important factor.

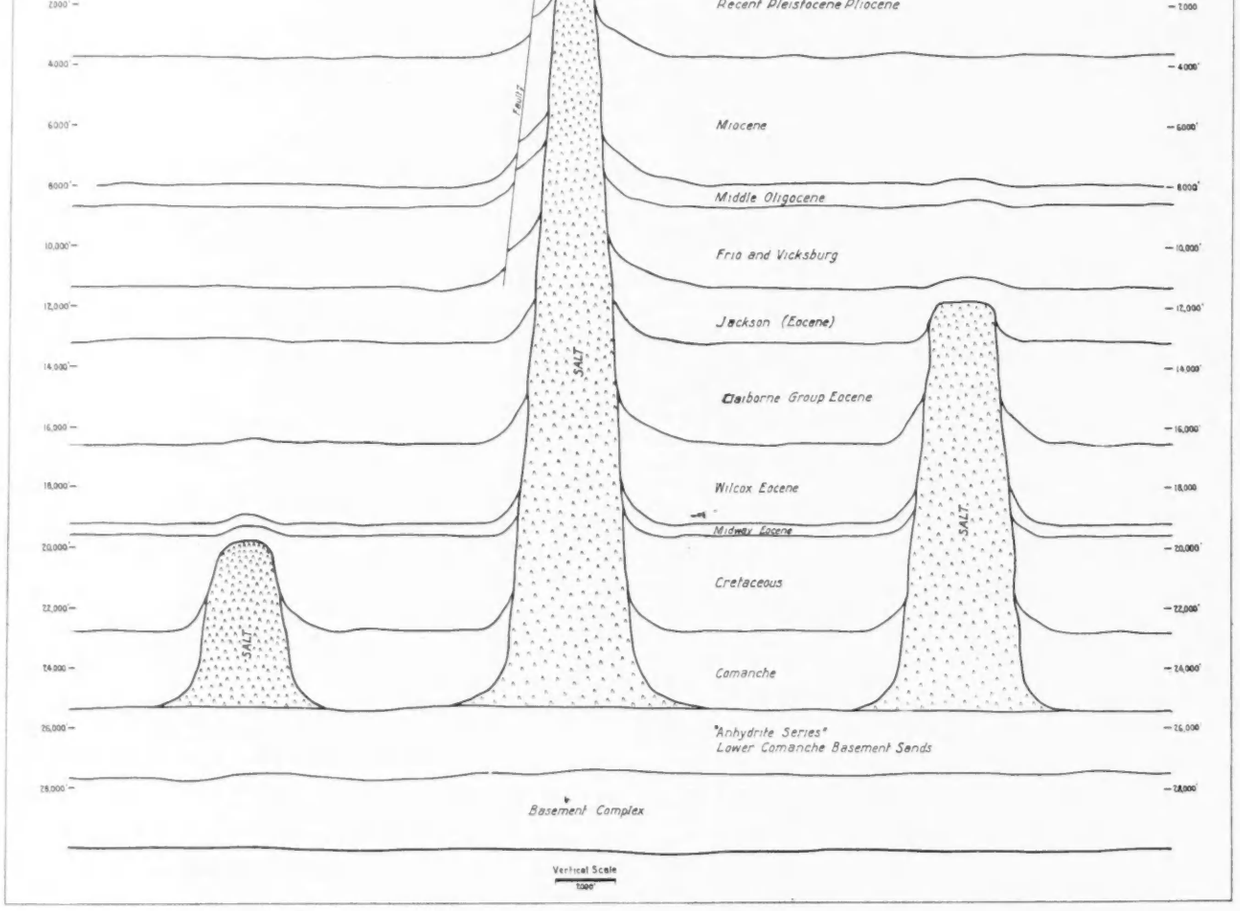
The thickness of possible oil-bearing sediments along the Gulf Coast was not fully appreciated until a few years ago, and even now the depth to the basement is the subject of considerable speculation. The fact that the Tertiary beds rapidly thicken toward the coast line gives a thickness that may never be entirely penetrated. The inaccessibility of the formations immediately above the basement apparently places the entire group of available formations in the favorable classification. The thickening of the formations toward the coast line, plus a fairly uniform dip with little loss of surface elevation combine to assure a thickness of favorable sediments that has not practical limits.

Deep drilling near Galveston and Houston indicates that the Tertiary and Upper Cretaceous beds a short distance from the coast line in this area are more than 19,000 feet thick, while the thickness to the true basement may be more than 21,000 feet. Although a number of formations that produce oil farther north have not been reached along the Gulf Coast, there are no good reasons to believe that they are not present below 10,000 feet along the entire coastal strip. They apparently thicken southward, placing them even deeper than they would be if only a gradually dipping influence prevailed. This thickening is to be expected because of the presence of a great basin or trough that is now filled with newer formations.

The importance of one formation after another that may produce oil below 5000 feet is appreciated by operators who have drilled in districts that offer only a limited thickness of productive sediments. This condition makes the Gulf Coast one of the really great potential oil producers of the world.

The existence of a great geosyncline along the coast line is generally recognized by leading geologists who have studied outcropping formations farther north and the thickening tendency toward the south. A geosyncline is nothing more than a great downward flexure of the earth's crust, and is the equivalent of a great valley or trough that has been filled with more recent sediments. It might be classed as the opposite of a great anticline or structural tendency. The complete filling of this original basin and the gulfward movement of the coast line have placed the deepest part of the geosyncline somewhere near the present coast line. The accessibility of the deepest part of this tremendous fill assures a thickness of promising sediments that has no practical limit. Even if the bottom of the trough were a good distance gulfward from the present shore line, the strip along the coast would undoubtedly have a greater thickness of sediments than could be penetrated with present equipment and methods.

The presence of a great geosyncline or trough along most of the Gulf Coast was suspected long before enough drilling was done to indicate strongly such a condition. During the past five years, geophysical and geological exploration has done much



Theoretical cross section of a portion of the Louisiana Gulf Coast, showing the depth to the basement complex and the types of salt plugs that may have affected the various formations above 25,000 feet.

to give acceptable estimates of the normal thickness of formations that should be found at various points along the coastal belt. A study of formations outcropping from 75 to 200 miles from the present coast line, the dip of formations toward the coast line, the stratigraphic thickness of formations that are accessible only much farther inland and consideration of their thickening tendencies point to a depth of more than 20,000 feet to the basement in the vicinity of Galveston. Enough drilling has been done to indicate the presence of very deep formations that are normally found farther inland.

Drilling to depths of 8000 to 10,000 feet between Houston and New Orleans has proved that the formations steadily thicken eastward, with the greatest indicated depth to the basement being in the delta area of the Mississippi River. Around Galveston and Houston it is reasonable to assume that the average thickness of the Quaternary, Tertiary and Cretaceous beds is 20,000 feet, while a depth to the basement may be as great as 23,000 feet. The amount of downwarping of the basement beds apparently will determine the thickness of sediments along the coastal strip between Galveston and the mouth of the Mississippi River.

Near Lafayette, Louisiana, the thickness of the Recent, Pleistocene, Pliocene and Miocene sediments is about 8000 feet, and the indicated depth to the basement is about 26,000 feet. The thickening of sediments eastward indicate a depth to the basement of 31,000 feet in the lower Mississippi delta area. A short distance south of New Orleans the bottom of the Miocene is not expected above 10,000 feet.

The Bayou St. Dennis field, a new and important producing area 30 miles south of New Orleans, gives a good clue as to the thickness of sediments in the delta district. The discovery well in this field was completed at about 9600 feet, yet drilling stopped in the Miocene. By giving the Oligocene formations a thickness of only 3000 feet in this district, it readily will be seen that the delta area offers great possibilities between 10,000 and 13,000 feet.

Seismic prospecting has been very helpful in indicating the presence of the great trough or geosyncline

along the Gulf Coast, and work along this line points to a sediment thickness of at least 20,000 feet in the Galveston area. The torsion balance has been a factor in efforts to determine the probable base of the salt core of various salt domes along the coastal strip. This base is believed to be 18,000 to 20,000 feet in the Galveston-Houston area, and perhaps much deeper in other sections.

The great basin, depression or trough becomes more pronounced in southeastern Louisiana than in southeastern Texas. The basement on which the possible oil-bearing sediments were deposited apparently was not warped down more than 6000 feet at Galveston; but near the mouth of the Mississippi River this basement or "floor" was warped down 15,000 to 18,000 feet. Since all of this great depression is filled to the surface, it is easy to understand the thickening tendencies of sediments eastward along the coast from Houston.

It may appear fantastic to speak of possible oil-bearing formations below 20,000 feet, but their presence assures a reserve thickness that encourages very deep drilling after the shallower formations have proved non-productive. Few comparable geosynclines or troughs exist, and perhaps none has a greater number of formations falling definitely in the promising classification.

The thickness of the formations lying a good distance deeper than those that have been reached with the drill has been fairly accurately determined by seismic prospecting. The depth to the base of the Claiborne of the Eocene is known to be more than 15,000 feet along the coast line south of Houston. The Wilcox and the Midway, also of the Eocene, undoubtedly are present at this point, or at least there are no good reasons for doubting their presence.

In the South Louisiana area, the depth to the basement has been fairly well indicated, despite the great thickness of sediments. In Iberia Parish the salt plug of a few salt domes reaches almost to the surface, but it is believed that the base of the salt lies at a depth of about 25,000 feet. At this point the indicated depth to the top of the Miocene is 4000 feet; the Oligocene, 8000 feet; the Eocene (Jackson), 11,500; the Upper Cretaceous, 19,500 feet; the Comanche, 22,500 feet; the anhydrite series of the Lower Comanche and the basement mixture, 25,500 feet; and the true basement complex, 28,000 feet. Such a thickness of favorable formations permits drilling to far greater depths than have been attained with present methods and equipment.

The great thickness of the unconsolidated sedimentary beds along the Gulf Coast has attracted a number of operators who are chiefly interested in developing very deep production. The presence of a much greater thickness of probable oil-bearing formations than can be penetrated under the most favorable mechanical arrangements adds interest from an experimental standpoint, but the possibility of 10,000-foot production has become more than a conjecture.

A study of geophysical data definitely points to the presence of a record thickness of sediments that had been indicated by straight geologic exploration. Few, if any, definite reflections have been recorded in the Houston area from depths below 20,000 feet, but the deepest classifiable reflections show an unconsolidated condition to a depth of more than 18,000 feet. The velocity of transmission of the seismic waves indicate more than 20,000 feet of formations above the true basement complex, with the lower 2000 feet consisting of massive formations that may form a preliminary basement for the true unconsolidated formations.

Although the average Gulf Coast operator has a definite objective in mind before drilling starts, the thickness and variety of formations offer a good chance to develop production both above and below the sand or zone that looks most promising. The Bosco, Louisiana, field is a good example of such a condition. The drilling programs of several major oil companies call for attainment of the principal objective depths, with deeper drilling clauses that become effective in case of preliminary failures.

The Frio formation of the Oligocene is the principal objective of operators who hope to develop production around 9000 feet on deep-seated salt domes, but it does not follow that this zone is the last chance at an accessible depth. There are good reasons to believe that the Cockfield, Upper Saline Bayou and Lower Saline Bayou of the Eocene will prove productive when they are reached on favorable structures. Both the Upper and Lower Saline Bayou produce oil at Batson, Hardin County, Texas, and nearer the coast they may be good producers.

The thickness of favorable deep formations along the coast line may be the determining factor in efforts to develop production below formations that are now productive. In going coastward from a marker 100 miles from the Gulf, the formations dip and thicken at different rates. The shallower formations dip at a much more gradual rate than the deeper formations. Such a condition may mean that the Cockfield and the Upper and Lower Saline Bayou are too deep to reach in the vicinity of Galveston, and certainly out of reach along the Louisiana Gulf Coast. Even with a sharp dipping and thickening tendency, these formations offer distinct possibilities a short distance from the coast line, or in areas that yield the Frio at a reasonable depth.

Although the Cockfield, Upper and Lower Saline Bayou formations have been reached in only a few areas along the coast line, it is reasonable to assume that they may prove productive in many sections. The very meager success in the Cockfield at Esperson, Eureka and Orchard does not condemn the formation along the Gulf Coast, particularly on the flanks of shallow salt domes that are producing from Miocene and Oligocene formations.

A wildcat test recently abandoned in the eastern part of Wharton County, Texas, gave an interesting clue as to the sequence of formations in the upper and intermediate Eocene system. The Cockfield was encountered at 6868 feet, the Upper Saline Bayou at 7161 feet and the Lower Saline Bayou at 7670 feet. The well was abandoned at 8667 feet in the lower section of the Lower Saline Bayou (Cook Mountain). A small amount of oil was produced in the Cook Mountain, a development that lends encouragement to deeper drilling along the entire eastern end of the coastal strip.

Enough is not known of deep formations in South Louisiana to outline a drilling program with definite objectives below 10,000 feet. Eastward along the coast the formations dip rapidly, and zones that are accessible in the vicinity of Lake Charles are entirely out of reach a short distance to the east. At Iowa the Marginulina formation is found at about 6700 feet, while at Roanoke, a short distance eastward, it

is encountered at a depth of about 8700 feet. It is believed, however, that the Frio formation offers good possibilities in such fields as Iowa and Roanoke, and may prove productive in other areas nearby.

The thickness of formations that may prove productive along the Louisiana coast is so great that testing these zones becomes a matter of mechanics. Production in a number of fields in Terrebonne Parish is coming from the Upper Miocene sands, a condition that emphasizes the possibilities of the deeper Miocene and Oligocene formations that should be accessible in the entire district on decided uplifts.

The Louisiana Gulf Coast has not been so extensively developed as the Texas coastal strip, and this part of the belt undoubtedly offers outstanding opportunities below 8000 feet. The presence of formations that are productive on practically all of the known and tested structures lends encouragement to the operator who wishes to encounter them at depths regarded a few years ago as excessive.

Development along the Gulf Coast has been an interesting progression that involved several types of structures and a number of levels within each area. Prior to each major discovery, few operators would concede it was possible to produce oil under conditions that later prevailed in fields of a new type. It was generally believed by nearly all geologists that no oil would be produced north of the salt dome belt and along the Conroe trend, prior to the discovery of the Raccoon Bend field. Discovery of the Conroe field completely wrecked the theory and opened a vast strip to development, besides adding to the potentialities of the Yegua formations nearer the coast line.

As production shifted and new types of structures were found productive, a few of the most far-sighted operators and geologists recognized the possibility of production from a type of structure that could not be foreseen. Deep-seated salt domes were not recognized as a new source of production during the first part of the shallow, piercement type salt dome development period. Even flank production around salt domes that were producing from the cap rock was considered a very remote possibility.

The large number of important discoveries recorded during the past two years along the Texas-Louisiana Gulf Coast reflect the possibilities of the area in formations that were practically unknown during the early development period. Most of these new fields are producing from sands overlying deep and apparently blunt salt masses that failed to intrude to a level near the surface.

The cost of making a discovery along the Gulf Coast has become increasingly higher, but it does not follow that all discoveries in the future will be made at an unreasonable expenditure. The average cost will rise as new fields are found and as average depths increase, but the importance of future discoveries may offset the larger expenditures involved in the exploratory campaigns.

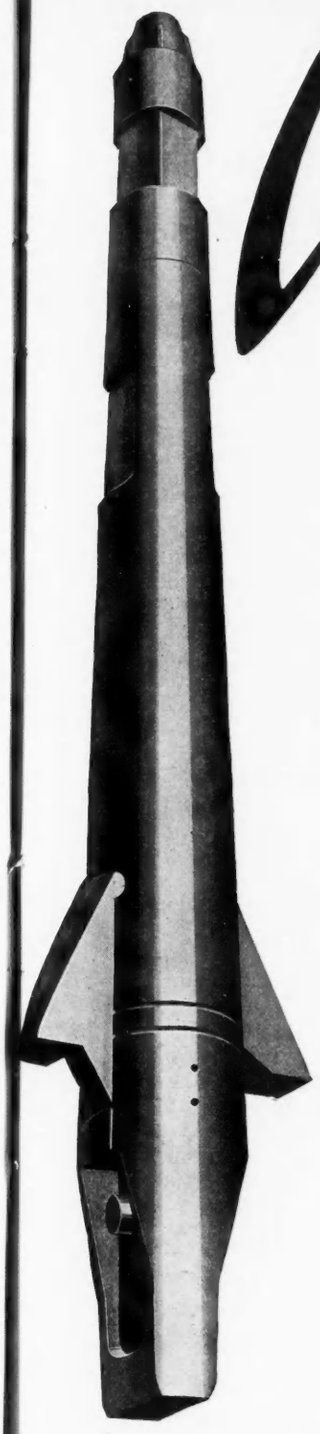
Any large operator who is willing to enter into the Gulf Coast exploratory campaign on a competitive basis stands a good chance of making important discoveries. The high percentage of structures that produce oil along the entire coastal strip prompts a search for structural trends that may warrant drilling operations. In the South Louisiana area, the Frio formation at a depth of about 10,000 feet may develop into a good producing stratum over deep-seated salt domes, while along portions of the Texas coastal strip the Cockfield and Upper and Lower Saline Bayou formations offer good objectives at about the same depth. Other formations above and below 10,000 feet in both sectors hold considerable promise.

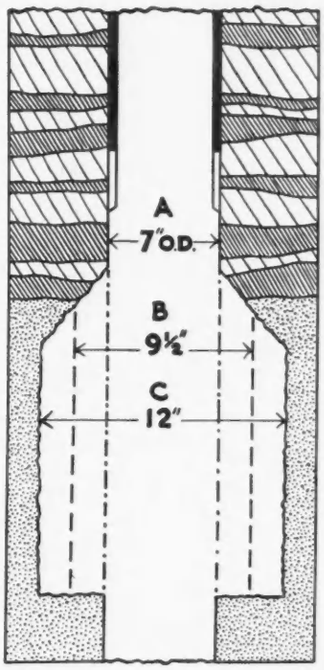
An entirely new type of structure may be found on the Gulf Coast. The great thickness of sediments, and the plunging and downwarping tendencies of formations filling the great trough or basin along the coast line may account for a type of oil field unlike any yet discovered in the area. Due to the thickening necessary to fill the original basin to the surface, it is altogether possible that a truncated condition has accounted for major oil accumulations in the heart of the salt dome belt. Many formations not present 100 miles from the coast line may be found along the narrow coastal strip, since sedimentation and filling tendency may have thrown in a number of new and unknown strata to bring the fill to the surface.

Estimated Normal Thickness of Formations Along Coast Line Near Galveston, Texas

		Feet	Depth to Base—Feet
Recent, Beaumont and Lissie	Pleistocene	2,000	2,000
Reynosa	Pliocene	500	2,500
Fleming (Legarto) and Oakville	Plio-Miocene	3,200	2,500
Catahoula	Oligocene	500	6,200
Middle Oligocene	Oligocene	1,500	7,700
Discorbis, Heterostegina, Margiulina			
Frio	Oligocene	1,200	8,900
Vicksburg	Oligocene	1,600	10,500
Jackson	Eocene	1,700	12,200
Claiborne:			
Yegua	Eocene	2,200	14,400
Cook Mountain	Eocene	700	15,100
Mt. Selman	Eocene	1,100	16,200
Wilcox	Eocene	2,000	18,200
Midway	Eocene	500	18,700
Navarro, et al.	Upper Cret.	1,500	20,200
Comanche	Lower Cret.	1,500	21,700
Anhydrite Series	Lower Cret.	1,000	22,700

BRIDGEPORT Announces THE "Pay" ROE UNDERDIGGER





Above: Illustrating enlargement of the "pay" formation with the Roe "Pay" Underdigger. Here the "pay" in the 6⅛ inch hole was first enlarged to 9½ inches, then later enlarged to 12 inches.

Underdigging of the hole may be started at any point below the casing and enlargements of as little as one inch, or as much as double the original size of the hole, may be made as desired.

Operation of the tool is extremely simple. It is sturdily built, having no fragile parts. Never has any part of the tool been lost in the hole. Tools are in service that have successfully completed 20 and more jobs. It may be successfully used after wells have been shot several times.

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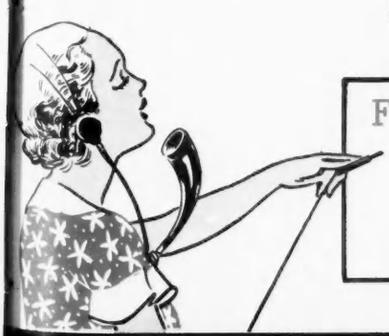

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Steam Conservation

RIG AT CHANDLER, OKLAHOMA, PROVES POSSIBILITY OF VAST STEAM SAVING

By WARREN L. BAKER, Editor

ALTHOUGH steam has been used as a source of motive power on drilling rigs since oil was first produced from drilled wells, there have been but few sincere attempts to conserve steam heat until quite recently. During the past years several attempts have been made to improve the efficiency of steam power.[1] In this connection a rig used recently at Chandler, Oklahoma, is of considerable interest, as it employed several of the steam heat saving devices now available, and at the same time represented something new in rig hook-up design. Moreover, a carefully kept record of steam consumption was kept and demonstrates that considerable improvement may be made.

There are several major points on a drilling rig that offers opportunity for appreciable heat conservation. They follow: 1. feedwater heating; 2. boiler efficiency; 3. superheating; 4. prime movers; and 5. boiler and steam line insulation.

The main portion of this article will be descriptive of a rotary rig used by Kirk-Green-Way in drilling Stanolind Oil & Gas Company's Lewis 1 at Chandler, Oklahoma, and to present results of fuel consumption tests on this well.

Description of Layout

The machinery used on this rig is briefly presented in Table 1. The 12 x 12 twin-cylinder, horizontal piston valve engine was used in driving the rotary table and drawworks, and operated at speeds as high as 650 revolutions per minute. Minimum hoisting time, derrick floor to fourble board, was ten seconds.

Circulation was provided by the 7¼-inch by 18-inch power slush pump driven through V-belts by a separate 7¾-inch by seven-inch vertical twin-cylinder piston valve steam engine. This separate slush pump engine maintained an appreciably constant fluid pressure of 700 pounds per square inch at an average pump speed of 27 revolutions per minute. The 15-inch by 7¾-inch by 20-inch steam driven pump was used merely as a standby.

The five-inch and ten-inch by six-inch by 12-inch feedwater heater pump utilized the heat in the exhaust steam from the engines to furnish hot water to the boilers. Contrary to possible inference, the difference in the feedwater temperature during the various rig operations is directly attributable to the reduction in the amount of exhaust steam supplied to the heater chamber when the small slush pump engine was at a standstill and the drilling engine was at rest or operating periodically.

By means of the separately-fired superheater under automatic control a predetermined steam temperature of 550° F. (approximately 150° superheat) was maintained on Lewis 1 well regardless of the flow of steam through the superheater.

Boilers of the locomotive type operated by a 250-pound working pressure under natural draft. For a period of approximately three days, representing 70 hours drilling time and upwards of 950 feet of drilled hole, a single boiler was used and could be popped at any time; both boilers were operated the greater part of the time, however, for test purposes. It should be understood that two boilers were necessary only when jetting the slush pits, one boiler unit being quite capable of supplying the normal steam demands of the rig.

The burners in the boiler installation at Chandler were of the conventional air and gas premixing type designed to set on the grate line and fire vertically upward. Blast firing, an alternate method used to advantage at heavy boiler capacities, was made superfluous by merit of the unprecedented economics of the steam equipment.

The general scheme after which these items of equipment were set-up is clearly indicated in the typical layout shown in Figure 1. It should be borne in mind that the layout shown is not a reproduction of a layout of the Kirk-Green-Way rig, but is one of a typical rig hooked up in the same manner as the one used at Chandler. The drawing shows three boilers, whereas the Kirk-Green-Way rig used only two. No standby boiler feed pump is shown in the drawing, whereas the Chandler rig did have such a pump on the location.

Fuel Consumption Remarkably Low

The fuel consumption of the rig used on Stanolind Oil & Gas Company's Lewis 1 was remarkably low with the machinery described in Table 1 and in the foregoing paragraphs.

A daily average of 192,500 cubic feet of natural

TABLE 1
Machinery Employed on Lewis 1

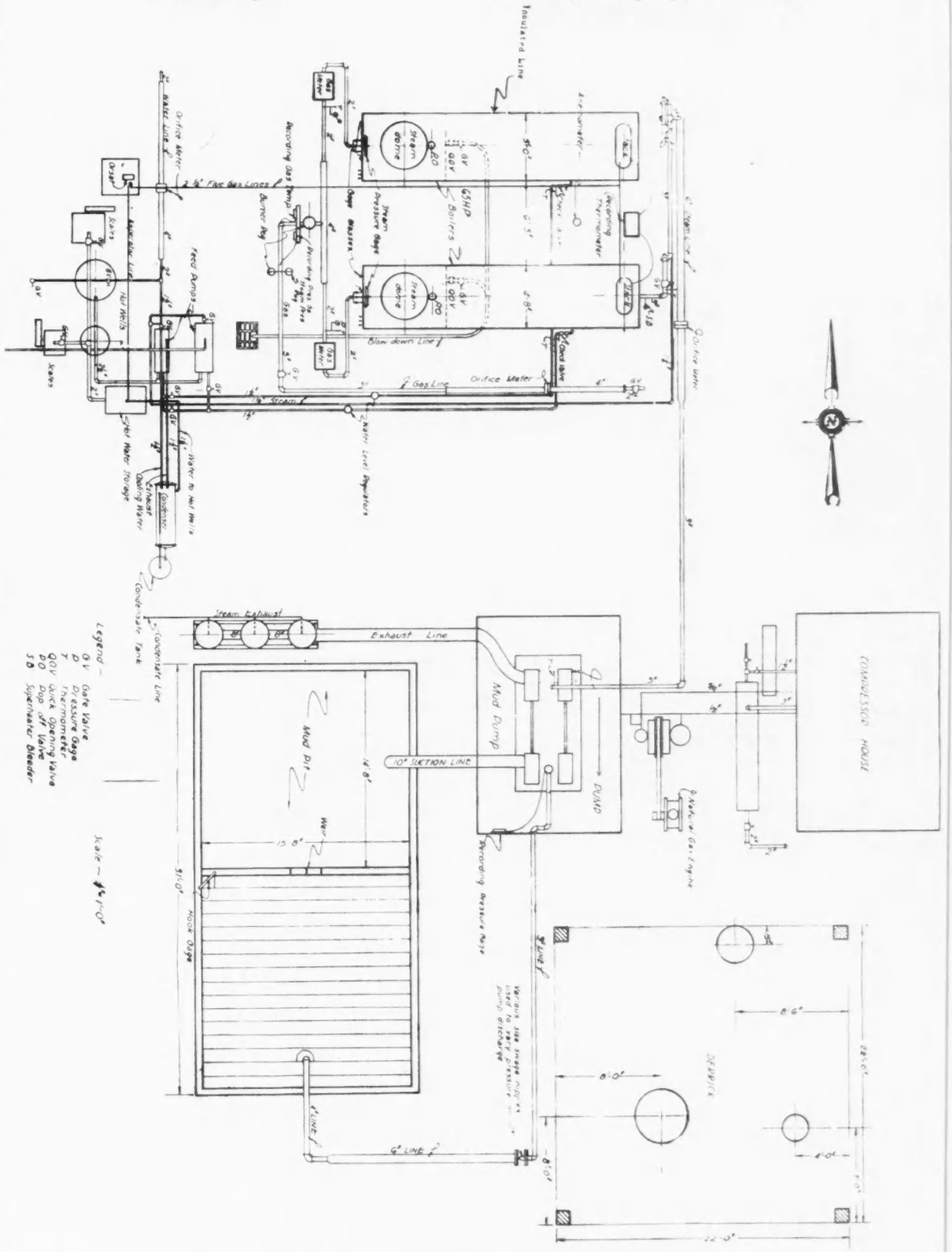
Derrick		122 ft.—24′ Base.
Rotary Drawworks		Unit Type.
Rotary Table		Conventional Type, Non-Make and Break.
Engine	1	12″ x 12″ Horizontal Twin Cylinder Piston Valve Steam Engine.
	1	7¾″ x 7″ Vertical Twin Cylinder Piston Valve Steam Engine (Driving Power Slush Pump).
Pumps	1	7¼″ x 18″ Power Driven.
	1	15″ x 7¾″ x 20″ Steam Driven (Standby).
	1	5″ and 10″ x 6″ x 12″ Feedwater Heater Pump.
	1	Boilerfeed Pump (Standby).
Superheater	1	Separately Fired.
Boilers	2	125 H.P.—250 lbs. Working Pressure. Conventional Low Pressure Gas Burners. 28 ft. Stacks without Forced Draft.

[1]See references at end of article.

FIGURE 1

Steam rig with superheater and feedwater heat.

1. Feedwater heater pump.
2. Boilers.
3. Superheater.
4. Steam Engine.
A. Power slush pump.
B. Vertical steam engine.
5. Steam engine driving slush pump.
6. Standby steam pump.



gas was the fuel consumed using four-inch drill pipe and nine-inch rock bits with four ¾-inch pipe holes. Based on the actual charges and meter readings of Oklahoma Natural Gas Company, the total fuel cost for the 30 days drilling time amounted to $716.52 at the prevailing rate of 12 cents per thousand feet; a scant 20 percent of the cost for a rig consuming the average million cubic feet of gas daily at the same base rate.

Equally as gratifying as the low average gas consumption is the fact that at no time in the entire period required to complete the well did the daily consumption exceed 240,000 cubic feet. The maximum consumption being realized on a cold day with excessive jetting of the slush pits taking place.

Pertinent well and rig data bear out that average operating conditions prevailed, as shown in Table 2.

TABLE 2
Pertinent Well and Rig Data

Well	Stanolind Lewis 1
Location	Chandler, Oklahoma
Total Depth	5025 ft.
Average Footage	162 ft. per Day
Total Drilling Time	30 Days
Drilling Time	538 Hours
Trip Time	88 Hours
Coring Time	81½ Hours
Down Time	12½ Hours
Drill Pipe Size	4 Inches
Rock Bit Size	9 Inches
Load on Bit	6 Points
Fuel Consumption	192,500 Cu. Ft. per Day
Fuel Cost at 12 cents per 1,000 Cu. Ft.	$26.10 per Day
Rotary Speed (Average)	100 R.P.M.
Pump Speed (7¼" x 18" Duplex)	27 R.P.M.
Fluid Pressure	700 lbs. per Sq. In.
Feedwater Temperature:	
While Drilling	210° F.
While making Trip	200° F.
While Idle	180° F.

Steam Equipment Operation

The feedwater heater used on the rig heated the feedwater to a temperature of approximately 210° F., which is within 10° F. to 25° F. of the temperature of the exhaust steam in the heater chamber. Tests have shown that feedwater heated to 210° F. requires 13 percent less heat to convert it into steam at 250 pounds per square inch gauge than does 55° F. feedwater. Naturally, this results in a saving in the amount of raw water used.

The value of superheating effect on heat conservation is well known. However, several fundamental factors will be mentioned here. The specific volume (cubic feet per pound) of dry saturated steam at 250 pounds per square inch gauge is 1.745 cubic feet per pound. The specific volume of steam at 250 pounds per square inch gauge superheated 100° F. is 2.046 cubic feet per pound. There is, therefore, an increase in volume due to 100° F. superheat of 17.5 percent.

The total heat content of saturated steam at 250 pounds per square inch gauge is 1201.1 B. t. u. The total heat content of this same steam superheated 100° F. is 1264 B. t. u., or an increase of 5.3 percent. Thus (for any given amount of water evaporated), by increasing fuel consumption 5.3 percent, we add 17.5 percent to the volume of the steam when superheating it 100° F.

The use of superheated steam results in other notable operating improvements on a drilling rig.

TABLE 3
Recapitulation of Heat Conservation

ITEM	Fuel Saving	Water Saving
Feedwater Heater	13%	15%
Superheater	10%	15%
Engine Driven Slush Pump	30%	30%
Separate Engine Driven Rotary	6%(.20 x .30)	6%
Boiler and Steam Line Insulation	15% (Average)	15% (Average)

TABLE 4
Recapitulation of Fuel Savings

ITEM	Fuel Saved	Fuel Used Bbls. per Day
Average Rig (No Improvements)	0%	100
Feedwater Heater	13%	87.0
Superheater	10%	78.0
Engine Driven Slush Pump	30%	55.0
Engine Driven Rotary—Steam Saved 20% over Regular Rig—30% Total Steam to Rig Used by Hoisting Engine .20 x .30	6%	51.5
Boiler and Steam Line Insulation	20%	41.0

With saturated steam a very noticeable amount of condensation occurs in the long steam line running from the boiler plant to the rig. This condensation is entirely eliminated under ordinary conditions when superheat of 100° F. is used. Moreover, the machinery operates more efficiently, lubricates better and responds faster to heavy demands when supplied with dry steam.

During the past year a few installations have used a separate steam engine for driving power slush pumps, in addition to the Kirk-Green-Way rig. An installation of this type was described in THE OIL WEEKLY, September 23, 1935, page 35. These have proved quite satisfactory. The steam engine can be either of the single cylinder or twin cylinder type and either direct coupled to the pinion shaft of a power slush pump or driving through V-belts.

Likewise, separate steam engines have been used for driving the rotary table, see THE OIL WEEKLY, June 3, 1935, page 31. The power required to drive the rotary table is quite small compared with the capacity of the hoisting engine, consequently the engine used for this purpose is much smaller than the engine used for operating the draw works. These engines have been direct-connected to the rotary table through a gear box of suitable ratio to provide the desired range of rotary table speeds.

It should be noted here that the rig of Kirk-Green-Way at Chandler was not equipped with a separate steam engine for driving the rotary table. Therefore, engineers associated with the Lewis well believe that additional savings could have been accomplished.

Tables 3 and 4 represent some estimates of steam savings by the installation of conservation devices on present day rigs. Each of the items listed in Table 3 reflect the percentages of the total fuel and water used on rigs equipped with machinery of this type as compared with a steam rig not using them. In Table 4 it is assumed an average rig uses 100 barrels of fuel per day and the fuel savings have been calculated cumulatively.

References

"Many Hook-Up Innovations Are Installed on Gulf Coast Rig," by Charles Leyendecker, THE OIL WEEKLY, May 6, 1935, page 33.

"New Practices of Interest in Use on Kettleman Hills Drilling Rigs," by Brad Mills, THE OIL WEEKLY, June 3, 1935, page 31.

"A Slush Pump Hook-Up Installation Using Small, Separate Steam Engine Proves an Economy," by Floyd Swindell, THE OIL WEEKLY, September 23, 1935, page 35.

"Heat Conservation on Steam Drilling Rigs," by M. W. Phelps, Houston Chapter, American Petroleum Institute.

DISPOSAL of brines produced with crude petroleum and natural gas has been a long-continuing problem to oil and gas producers, as well as to farmers and stock-raisers in the vicinity of producing fields. An impartial appraisal of conditions pertaining to the problem of brine disposal leads to the conclusion that study of technical considerations, with proper weight given to the economic and social factors, is the most desirable approach to this problem.

This article represents work done under a cooperative agreement between the U. S. Bureau of Mines and the Kansas State Board of Health, and is abstracted from U. S. Bureau of Mines Report of Investigations 3297.

Oil Field Brine Disposal

STUDY OF TECHNICAL, ECONOMIC AND SOCIAL FACTORS AIDS IN RITZ-CANTON DISTRICT

By C. J. WILHELM, Assistant Petroleum Engineer, U. S. Bureau of Mines, Petroleum Experiment Station, and
LUDWIG SCHMIDT, Senior Petroleum Engineer, U. S. Bureau of Mines, Petroleum Experiment Station.

BRINE disposal is a problem of such magnitude in certain areas of Kansas that in August, 1934, a cooperative agreement was made between the Kansas State Board of Health and the U. S. Bureau of Mines for a technical study of methods of brine disposal.

Oil fields in the vicinity of McPherson were selected for the initial study, as the situation was critical in that area due to possible mineral contamination of potable-water-bearing formations, known as the Equus beds or McPherson formation by oil-field brine produced from formations underlying them. The principal fields in this area include Burrton, Haury, Hollow, Johnson, Nikkel, Ritz-Canton and Voshell. The Ritz-Canton field was selected for detailed study as it was the first of the group to be developed and has been subject to possible brine contamination for the longest period. Also, it was believed that the conclusions with reference to that field would be applicable to other producing fields in the Equus beds region.

McPherson Equus Beds

The McPherson Equus beds are an alluvial deposit covering an area of approximately 600 square miles in central McPherson, eastern Reno, and western Harvey and Marion Counties.

The surface of the Equus beds area is a broad, flat plain, sloping gently to the southeast with just sufficient gradient to take care of the normal rainfall. The surface is not cut by deep streams or gulleys. On the contrary, the streams in this region are shallow and meandering, and the majority of them are intermittent flow. To the west and southwest of McPherson are a number of basins and lakes, the largest of which is Lake Inman located 10 miles southwest of the city of McPherson.

The surface or top soil of this area is principally a sandy clay containing very little loam. Laterally this material may grade from sandy clay to clay or clayey sand. At a depth of four to six feet the sandy clay grades into a clay of less sand content. This condition was noticed in a number of test holes that were drilled east and south of McPherson. It may be possible that this clay layer is general over the entire northern Equus-beds area but locally may be absent. In the southern part of the Equus beds around Burrton and Halstead near the Little Arkansas River bed, the top soil is more sandy, with quite a number of shifting sand dunes.

The clay layer is unconsolidated, having just enough clay mixed with the sand to give it a slight

adhesive quality when wet, but when dry it becomes gritty and crumbles easily. The clay layer is porous and will allow free percolation of surface water.

Test holes in the Equus-beds area passed through a stratigraphic column typical of a river with a broad flood plain. As might be expected in the bed of a river having such a plain there was no evidence of horizontal continuity of an impervious layer. An agrading river is constantly shifting its direction of flow within its flood plain, hence changes in velocity cause changes in the character of the material being laid down at any one point.

The general trend of the surface drainage in the Equus-beds area is south to southeast. The divide between the Arkansas and Smoky Hill Rivers is within four miles of the Smoky Hill River and approximately 60 miles north of the Arkansas River; therefore, a small percentage of the surface drainage flows north into the Smoky Hill. Blaze Ford Creek drains the marshy lowland section of the Equus beds on its west side, Turkey Creek the central portion through McPherson County, and the West Emma, Middle Emma, and East Emma Creeks the eastern side. The entire drainage of the area is gathered by the Little Arkansas River, which joins the Arkansas River at Wichita. These streams are, as a rule, shallow and the flow sluggish except during high-water stage. During the dry seasons of the year the smaller stream beds are entirely dry or have only standing pools of water.

Production Data

Table 1 gives the average daily oil and brine-production totals and brine-storage facilities for the Ritz-Canton field as of October, 1934. Of the 262 producing wells in the field, 207 produce from the Viola a total of 15,067 barrels of oil and 9656 barrels of water, and the production of the 53 Chat wells is 2554 barrels of oil and 6329 barrels of water daily. One well, producing from both the Chat and Viola, averages 250 barrels of oil and no water. A Kansas City lime producer in the extreme northwest edge of the field has an average daily production of 65 barrels of oil and 22 barrels of water.

TABLE 1

Daily Brine and Oil Production and Brine-Storage Facilities as of October, 1934, Ritz-Canton Oil Field, McPherson County, Kansas

Number of producing wells	262
Oil (barrels per day)	17,936
Water (barrels per day)	16,007
Number of salt-water ponds	137
Total area of ponds (sq. ft.)	1,345,125

As the production data indicate, the ratio of the water production to the oil production is decidedly higher for the Chat than for the Viola. In the south end of the field, the Chat produces a high percentage of water; for example, in one section there are six wells with a total daily production of 158 barrels of oil and 3200 barrels of water from the Chat horizon. In the same section there are four wells producing a total of 165 barrels of oil and only 30 barrels of water per day from the Viola lime.

Figure 1 shows the total number of wells producing per month, the average production per well, and the total production per month in the Ritz-Canton field. The field is well past its peak oil production and some plugging of oil wells is taking place. As shown by curve A, the average monthly oil production is gradually decreasing. Curve C shows that the

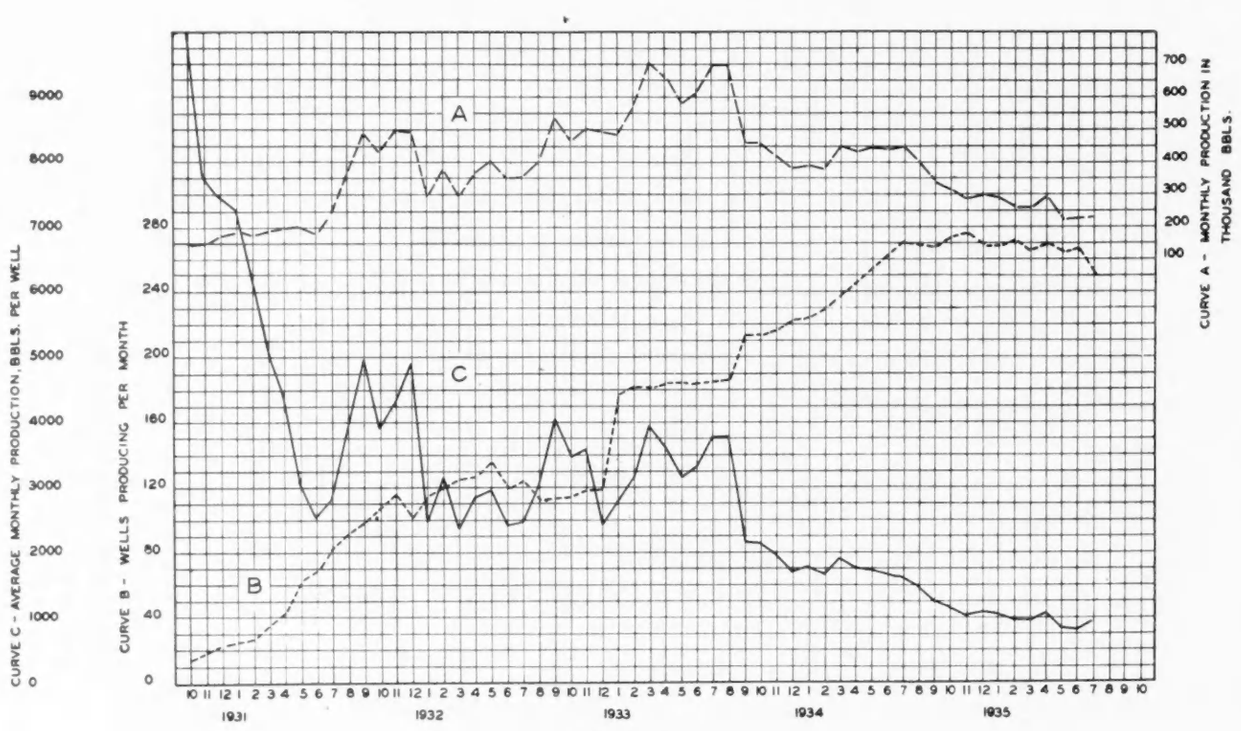


FIGURE 1

Curves showing number of producing wells, monthly production per well, and total monthly production of the Ritz-Canton oil field. Data obtained from Kansas State Corporation Commission.

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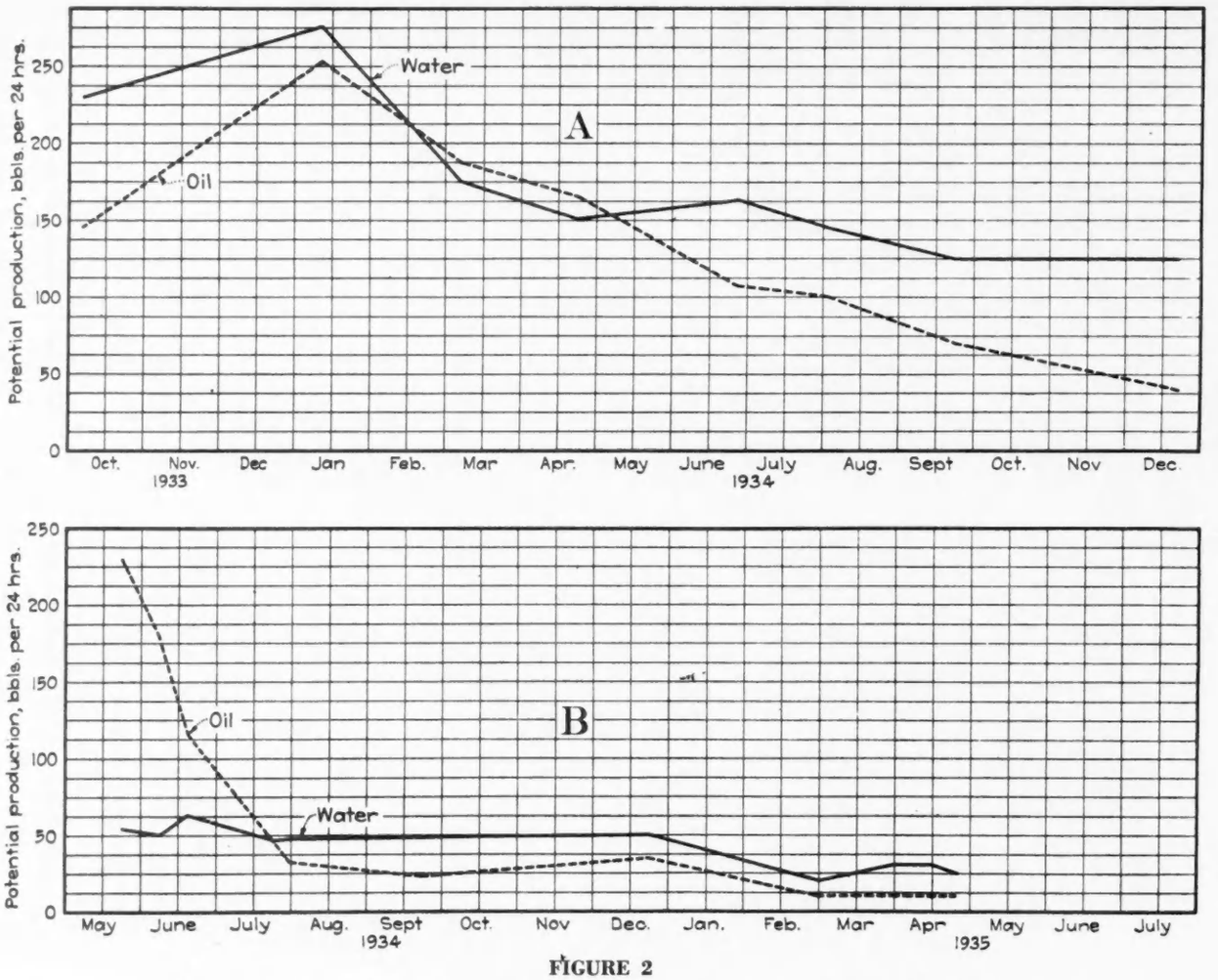

FIGURE 2

Curves showing decline in potential production of oil and water in typical Viola lime wells in the Ritz-Canton area.

average monthly oil production per well has been reduced materially; for example, in May, 1931, when state-wide proration began, the average monthly production per well was 3097 barrels, and in July, 1935, the average monthly production per well was 911 barrels. Curve B shows that the number of producing wells is also decreasing.

During the year (1934) the oil-production decline of both the Chat and the Viola wells has been very rapid. As the oil production of the Chat wells decline the water production, as a general rule, increases, due to a natural "water flood" condition in this formation. On the other hand, the water encountered in the Viola is connate, and the produced quantity declines as the production of oil declines. Curves A and B in figure 5 show the decline in production of oil and water of two wells in the Ritz-Canton field at various times when "potential" tests of the production were made. These two wells produce from the Viola lime in Sec. 13 and Sec. 23, T. 19 S., R. 2 W., respectively.

The present indications are that brine production in the Ritz-Canton field will decrease rather than increase. The life of the Chat wells producing large volumes of salt water will probably be short, and the oil will probably have been removed from the Viola wells before serious water encroachment occurs.

Analyses of Brines

Typical mineral analyses of brines from the three producing formations in the Ritz-Canton field are shown in Table 2.

From the volumes produced the total solids content of the brine should average approximately 76,300 p.p.m. and the chlorides 42,600 p.p.m. With a production of about 16,007 barrels of salt water per day, the mineral content of the brine produced,

TABLE 2

Analyses of typical brines produced with the crude oil in the Ritz-Canton field, McPherson County, Kansas.

Producing horizon	Viola lime	Chat	Kansas City lime
Radical	P.p.m.	P.p.m.	P.p.m
Ca	4,420	6,180	9,515
Mg	2,230	3,040	3,950
Na and K	9,325	28,700	61,600
HCO_3	156	73	21
SO_4	10	3	20
Cl	28,600	64,000	123,300
Total hardness	20,193	27,913	39,975
Carbonate hardness	128	60	17
Noncarbonate hardness	20,065	27,853	39,958
Bromine	*	*	592
Total solids	52,640	112,500	227,850
Sp. Gr.	1.031	1.072	1.136

*No determination made for bromine.

therefore, amounts to approximately 222 tons per day.

Surveys of Domestic Water Wells

Two surveys were made of the domestic water wells located within and around the edges of the Ritz-Canton field. Water samples were taken first in November, 1934, after a prolonged dry period, and again on the first of September, 1935, after a more normal spring and summer season.

All of the sampled wells obtain their water from the Equus-beds formation at depths of 20 to 80 feet. In the first survey the average chloride content of the water from 80 wells was 51.6 p.p.m., ranging from a minimum of 2 p.p.m. to a maximum of 409 p.p.m. In the second survey, the same 80 wells averaged 47.3 p.p.m. chlorides, ranging from a minimum of 1 p.p.m. to a maximum of 377 p.p.m. A comparison of the two surveys shows that in the first survey eight wells had over 150 p.p.m. chlorides, while there were only six wells in the second survey that showed over 150 p.p.m. chlorides. The results of analyses from two additional wells sampled during both surveys have been omitted purposely in calculating the average chloride content for the areas because the large increase in their chloride content was due to strictly local conditions.

Of 25 wells that were over 45 feet deep seven showed an increase in chloride content as against 18 that showed a decrease. Of the shallower wells, the percentage that showed increases in chloride content was approximately the same as the percentage that showed a decrease, thus indicating the possibility that the water supplied by the rains during the early part of the year had reached the lower part of the Equus beds and reduced the mineral content of the water in the formation. The average chloride content of the well water compares very favorably with that of the city water supply of McPherson, which averaged 45 p.p.m. chlorides in 1934.

With a few exceptions, the most serious contamination of water wells occurred in the south end of the field, where the surface soil is exceptionally sandy. It is evident that contamination is slowly taking place over almost the entire field.

Test Wells

Test wells were drilled at various points in the field to determine the extent of the Equus-beds deposit and also the amount and character of the mineralization.

In general, the logs of the test wells showed alternating sand, sandy clay, and clay layers, with some gypsum ($CaSO_4$) present. Impervious lenticular clay layers were found at various depths, but their character did not suggest that they were interconnected, thus indicating that the water is in one continuous body.

Water samples obtained from the test well in the north end of the field showed a chloride content ranging from a minimum of 16 p.p.m., taken at a depth of 55 feet, to a maximum of 49 p.p.m., obtained at a depth of 35 feet. The first water encountered at 30 feet had a chloride content of 42 p.p.m.

A test well in the central part of the field penetrated water-bearing sands in the Equus beds, the chloride content ranging from a maximum of 127 p.p.m., obtained at a depth of 32 feet to a minimum of 20 p.p.m from a water found at 74 feet.

A test well drilled about one-half mile south of the field penetrated several feet of gypsum at different depths. The chloride content of the water samples from this well ranged from a minimum of 28 p.p.m. at a depth of 50 feet to a maximum of 445 p.p.m. at 31 feet. The first water at a depth of 27 feet had a chloride content of 225 p.p.m.

Additional test wells showed that the surface formations in the Ritz-Canton field are of such porous character that it is impossible for the salt-water evaporating ponds, unless specially prepared, to retain the water and prevent damaging the fresh-water formation. If the fresh-water formation were protected from surface seepage by an impervious layer, as it is in some other areas, local domestic water wells would not be damaged.

Causes of Contamination

Probably the greatest source of mineralization of the Equus-beds water supply in the Ritz-Canton area is from seepage from improperly constructed lease brine ponds and from allowing the brine to escape from the production tanks and brine ponds, from whence it flows over the surface.

There is also a possibility of contamination due to improper plugging and abandoning wells; however, the writers did not find evidence of this type of contamination. An improperly plugged well might allow brine to seep into the fresh-water strata for an indefinite period before the increase in mineral content of the water is noticed in neighboring fresh-water wells. An examination of the plugging records on file at the McPherson County courthouse showed several wells that were plugged according to the law in effect at the time of abandonment; however, the procedure followed is inadequate and not in accord with good practice and may be a source of trouble in the future.

Several cases were reported of improper water "shut-offs" of the Chat horizon, which allowed brine from this horizon to enter wells producing from the Viola limestone. If such offending wells were properly repaired, the amount of brine brought to the surface by producing operations would be reduced and possible contamination of the fresh-water horizon eliminated. It should also be pointed out that several operators in this area have tried to reduce their brine production by bottom-hole cementing. Information given to the writers indicates that this method has not been very successful in this area.

Present Water-Disposal Methods

At present the brine from the Ritz-Canton area is accumulated in salt-water evaporating ponds. With a few exceptions, the ponds are all in good condition and free from oil, and precautions are being taken to prevent pollution of surface streams by overflowing ponds; but, due to the permeable character of the top soil, it is impossible to prevent seepage into the fresh water formation. There were several ponds in which operators found it necessary to haul clay to surface the bottom and sides of the pond to reduce seepage through the dikes.

Evaporation alone will account for only a small amount of the brine produced. Data of the U. S. Weather Bureau[2] show that the average evaporation at Wichita, Kansas, for the years 1919 to 1926, inclusive, totaled approximately 55.8 inches; however,

observations were made only from April to October, inclusive, in each year. Assuming 15 inches additional evaporation for the remaining 5 month period, the approximate average annual evaporation is 70.8 inches. The average annual rainfall for the same period at McPherson, Kansas, was 26.0 inches. Thus, the average net evaporation amounted to 44.8 inches per year. According to Rohwer[3] the rate of evaporation from larger bodies of water is lower than the rate shown by official Weather Bureau pans. Using Rohwer's factor of 1.427 for larger bodies of water, the average net evaporation for ponds in the Ritz-Canton area is calculated to be 31.4 inches per year, or approximately 0.0860 inch per day. Computing from this the amount of solar evaporation taking place from the ponds in the entire field, approximately 1720 barrels of water are evaporated per day. With the present method of disposal, that leaves approximately 14,280 barrels of salt water per day that is either entering the fresh-water formations or the neighboring surface streams.

Serious mineralization of the fresh-water sand probably has been prevented because of the large quantities of brine that have been carried away by streams during flooded periods; also, precipitation and movement of the fresh water in the formation have assisted in the dilution of the brine that has seeped into the fresh-water formation. The average annual precipitation, as mentioned previously, is 26 inches, amounting to a total of approximately 269,000,000 barrels per year for the 25 square miles included in the Ritz-Canton field. This volume of water would reduce approximately 1,580,000 barrels of brine with an average chloride content of 42,600 p.p.m. (average of Ritz-Canton brine) to a content of 240 p.p.m. Since there are approximately 5,329,000 barrels of salt water being produced annually which are not being disposed of by solar evaporation, it can be seen that other factors, such as disposal by means of surface streams and probably movement of both salt water and fresh water through the Equus bed, has prevented the development of general pollution over the Ritz-Canton area.

One operator made several tests to determine the practicability of returning the brine produced on the lease to a subsurface formation. According to information given the writers, the tests covered a period of about two years, and the brine was successfully returned to the Kansas City limestone formation and a salt water sand below it. The project was abandoned when the property changed hands.

Conclusion and Recommendations

A careful study was made of the brine-disposal problem in the Ritz-Canton areas, and the writers think that the following suggestions will materially reduce the possibility of future contamination of the domestic water supply in this general area.

1. The return of brine to subsurface formations is one of the methods by which positive disposal of brine is accomplished. Subsurface disposal is not always possible because of various difficulties encountered, such as precipitation of iron compounds and salts in solution, resulting in the sealing of the formation; also the inability to find a porous formation that will allow the injection of brine in considerable quantities. However, it is thought that where the producing formation has porous streaks large volumes of brine may be returned to the formation successfully upon proper preparation, such as settling, filtering, and possible chemical treatment to prevent precipitation of iron and salts in the well.

Experimental work by some of the operators in this general area indicates that returning the brines to subsurface formations probably offers the most satisfactory solution. Additional studies and experimental work along this line should be encouraged. However, such tests should be under close observation, and the input wells should be especially prepared so as to prevent any of the brine from finding its way into fresh-water horizons.

2. All wells drilled for oil or gas in the Equus-beds area should have the surface pipe cemented from below the Equus beds to the surface of the ground. This will prevent possible future contamination when the wells are abandoned and in many instances prevent the drainage of the fresh waters in the Equus beds to a lower formation.

3. All wells producing from the Viola limestone that show indication of producing water from upper horizons should be repaired.

4. Tests should be made to determine the effect of back pressure on wells producing large volumes of salt water. Wells producing from the Chat horizon probably would be the most logical for experiments of this type. Swigart and Bopp[4] describe in detail back pressure tests.

5. Controlled dilution of the brine by dumping it into the surface streams draining this area offers possibilities of the disposal of a part of the brine production, especially if the streams draining the area were included in flood-control projects. It would be necessary to build larger reservoirs, specially prepared, to prevent seepage of the brine in storage. The streams draining the Ritz-Canton area are intermittent in flow, and with present conditions the brine could be released only during periods of heavy run-off. The mean discharge of the Little Arkansas River at Valley Center, Kansas, for the year from October, 1922 to October, 1923, was 313 second-feet[5]. Since several analyses of the river water at this point made in March, 1935, showed an average chloride content of 40 p.p.m., then an average daily volume of approximately 23,900 barrels of brine with a chloride content of 42,600 p.p.m. could be diluted in the Little Arkansas River, this raising the chloride content to 250 p.p.m., which, as has been mentioned, is the maximum set by the U. S. Public Health Service. However, it is quite likely that the chloride content of the Little Arkansas River is considerably higher during and after continued dry seasons, and for this reason the average daily volume of brine that could be diluted in the river would be considerably reduced during that period.

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[4]Swigart, T. E., and Bopp, C. R., Experiments in the Use of Back Pressures on Oil Wells: Tech. Paper 322, Bureau of Mines, 1934, 65 pages.

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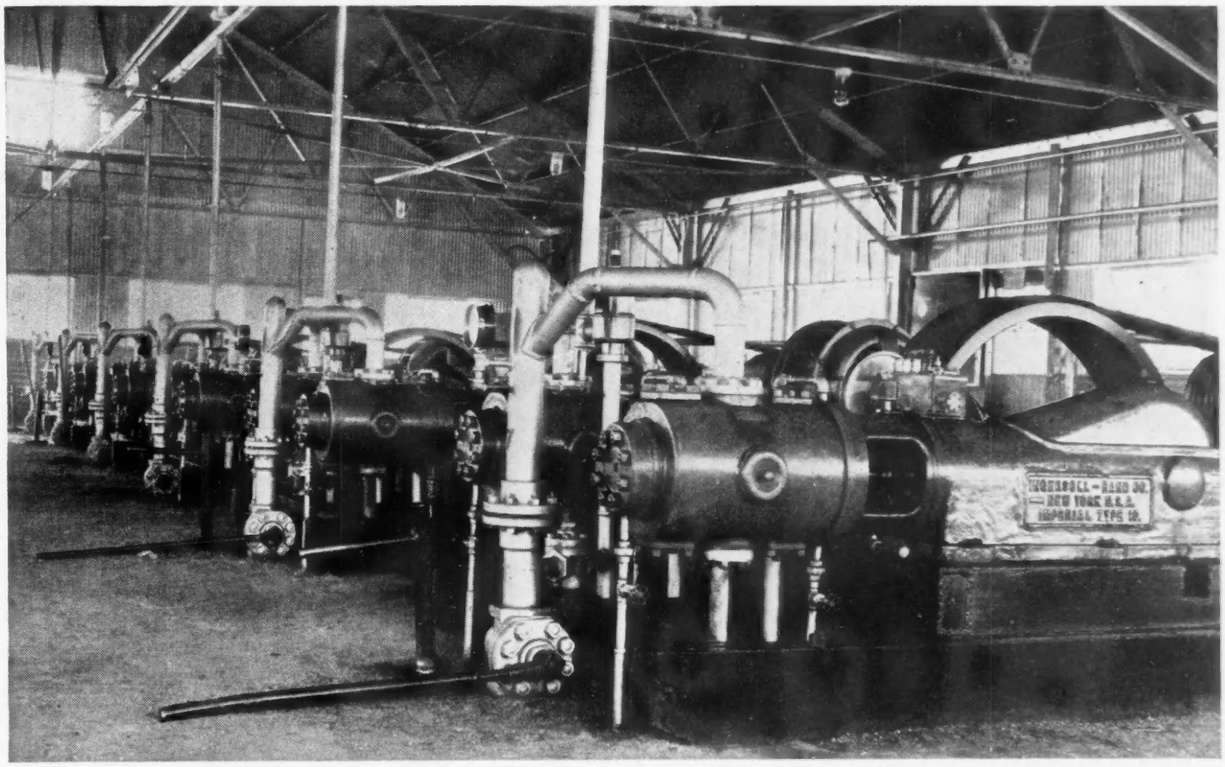


Interior of Phillips Petroleum Company's Walnut Grove gas-lift plant. Note how the compressors have been mounted on steel skid bases.

Unusual Gas-Lift Plant

SEPERATE STEEL SKID BASES AND GRAVEL FLOORS SPEED ERECTION AND DISMANTLING

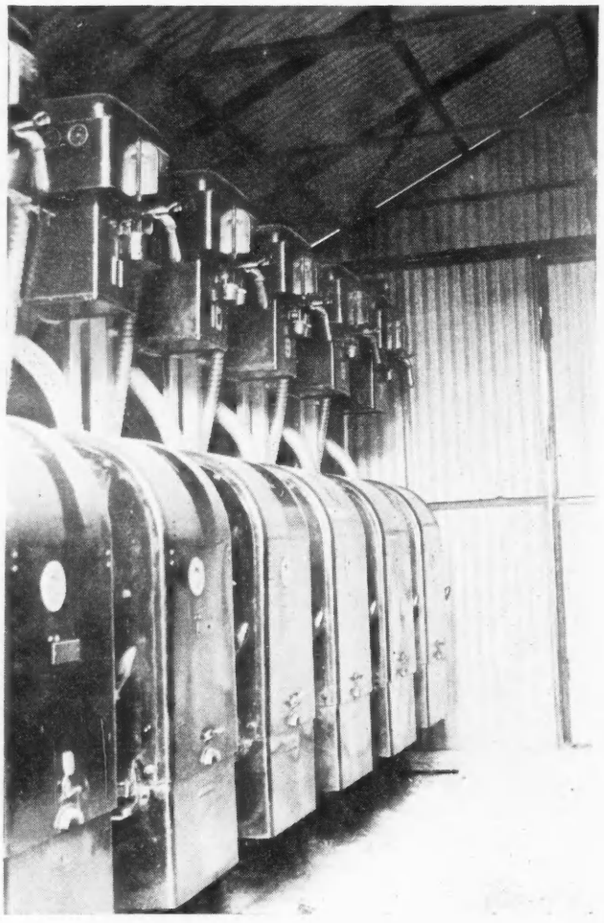
By JOHN C. ALBRIGHT

BECAUSE of the necessity of lifting oil by artificial methods in the Oklahoma City field, gas-lift stations have been erected in such short notice that the usual practice of having cement foundations and floors has been disregarded in several instances.

One gas-lift plant erected hurriedly to obtain a larger yield was built by Phillips Petroleum Company in the Walnut Grove addition in the North Canadian river area. The compressors and electric motors were mounted on heavy timbers sunk in the sandy soil. The station contains 12 twin, belt-driven compressors, each of which is equipped with gas cylinders having a bore of 7½ inches and a stroke of 10 inches. The 100-horsepower electric motors used to drive these compressors are installed immediately behind the compressor units and are connected to them through V-belt drives.

The actual foundation for these machines has been fabricated from heavy boiler plating. Longitudinal hollow sections were made by welding the metal into a length sufficient to clear both ends of the units. The lower plate is turned up in the shape of a sled runner. Cross members were fitted to these bases and the compressors and motors are bolted to these cross members. Each unit is a separate piece of equipment and may be removed without disturbing any of the other machines. The motors used to drive the compressors in addition to being set behind the compressing unit are a little to one side so as to procure the proper alignment of the multiple V-belt power transmission system. A sliding base for the motors is used to compensate for any belt stretch.

The compressors were installed in two identical rows, each containing six machines. Connections were made to the suction and discharge headers

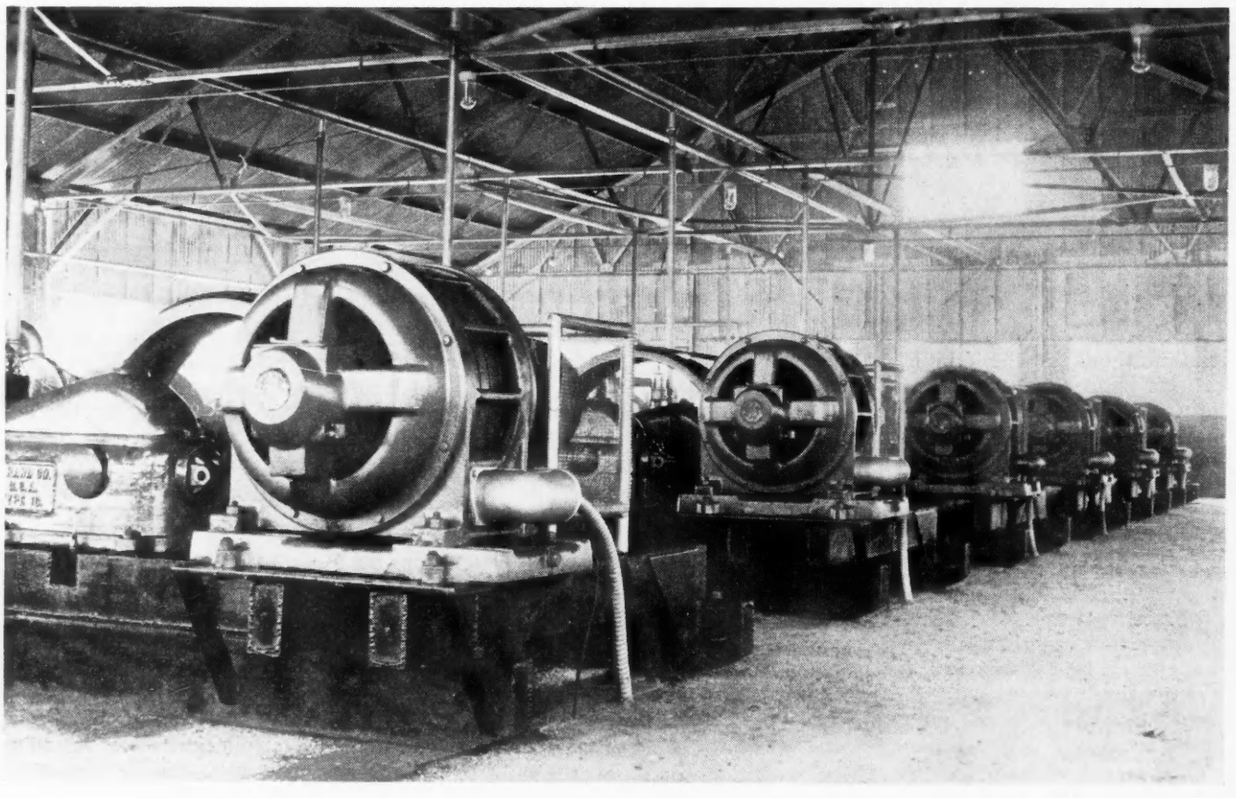


with a minimum amount of labor and material. The electric conduit was placed beneath the gravel floor, and the controllers are to be found in a separate steel building behind the compressor room.

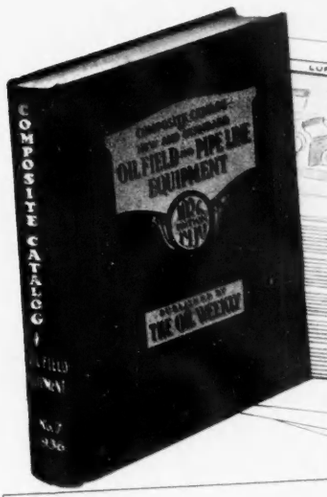
It was decided to mount the compressor units without the typical concrete blocks and floors because of the lack of time, and the plan originally was considered more or less of a temporary hook-up. However, the method has proved itself an economical one, and now the company has constructed other gas-lift plants in a similar fashion. Because of the shape of the longitudinal skid bases, curved like sled runners, and since they are only bolted to the heavy timber foundations, any machine may be moved a reasonable distance without loading onto a truck and trailer. Naturally, the design of installing requires a minimum amount of time during erection, and the salvage value is high since nothing is left at the location but the gravel floor when the units are moved.

The controllers used by Phillips Petroleum Company at its Walnut Grove gas-lift station are located in a separate room from the compressors.

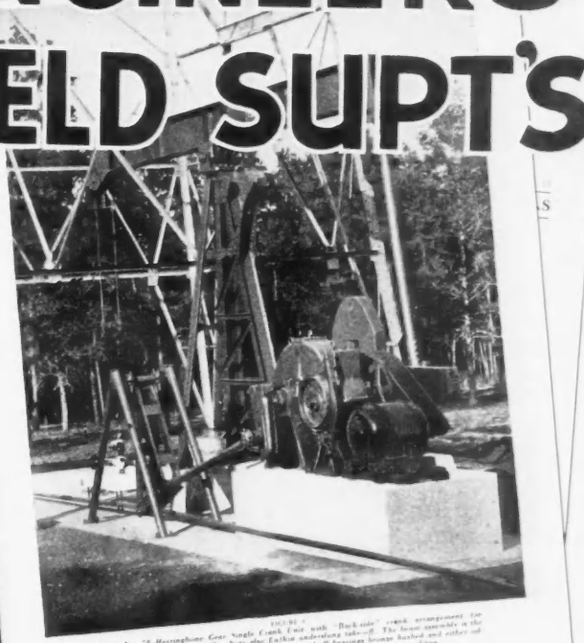
The prime mover end of the compressors in the plant are shown below. There is another row of compressors, identical with this one just to the right of the area covered by the photograph. All motors are 100 horsepower.



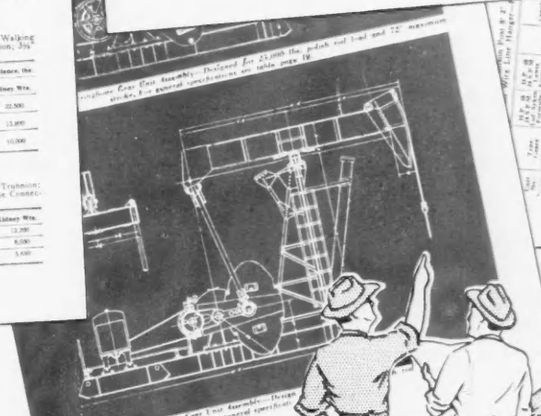
EXECUTIVES ENGINEERS FIELD SUPT'S.



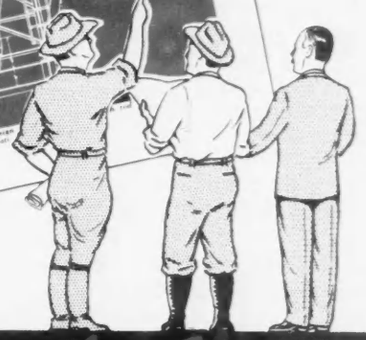
LUFKIN FOUNDRY & MACHINE CO.
LUFKIN, TEXAS
LUFKIN TWIN CRANK UNITS
Table of Specifications
Lufkin Gear Ratings Are Based on Wear.
Lufkin Gear Ratings Are Based on Wear Insuring 5 to 10 Years Service Without Appreciable Loss in Efficiency.
TC-1—NO. 1 TWIN CRANK ASSEMBLY—(See Page 20, Fig. 27)
Designed for 25,000 lbs. Polish Rod Load and 72" Maximum Stroke
TC-2—NO. 2 TWIN CRANK ASSEMBLY—(See Page 20, Fig. 28)
Designed for 20,000 lbs. Polish Rod Load and 56" Maximum Stroke
TC-3—NO. 3 TWIN CRANK ASSEMBLY—(See Page 21, Fig. 29)
Designed for 17,000 lbs. Polish Rod Load and 48" Maximum Stroke.
TC-4-11 TWIN CRANK ASSEMBLY—(See Page 21, Fig. 30)
Designed for 12,000 lbs. Polish Rod Load and 42" Maximum Stroke.



Lufkin No. 58 Herringbone Gear Single Crank Unit with "Back-side" crank arrangement for pumping one or two extra wells. Note also Lufkin underslung take-off. The beam assembly is the Lufkin Center-line type—all working points in line and all bearings bronze backed and either oil bath or Alemite lubricated, insuring positive oiling and long wearing qualities.



Lufkin No. 2 Twin Crank Herringbone Gear Unit Assembly—Design similar, for general specifications see table page 19.



Illustrations Engineering Data Specifications

Executives, Engineers and Field Superintendents will appreciate the helpful information presented by LUFKIN in the Composite Catalog of Oil Field and Pipe Line Equipment.

LUFKIN FOUNDRY & MACHINE COMPANY
LUFKIN, TEXAS
Branches in
Houston, Dallas, Henderson, Tulsa, Los Angeles, New York

Lufkin

Reinforcing a Junction

STUDY OF CAUSE AIDS IN OVERCOMING TROUBLE AT A PIPE LINE INTERSECTION

By ELTON STERRETT

AFTER breaking at, or close to, the seam on two occasions while carrying crude under 900 pounds per square inch pressure, the junction of a six-inch delivery branch with an eight-inch main line was regarded as one of the "hot spots" of an East Texas system.

Both breaks came approximately at the spot in the union of the two pipes through the section A—A shown in the accompanying sketch. By referring to the subjoined (lower) drawing of the section, it is evident that the points H—H, one each above and below the center line of the eight-inch pipe, are the weak spots in the structure.

Each impulse of the main station pump plungers results in a momentary rise in pressure that is transmitted through the fluid in the line at a speed so nearly approaching that of sound through the oil* that for the short distance from pump manifold to junction it may be regarded as instantaneous.

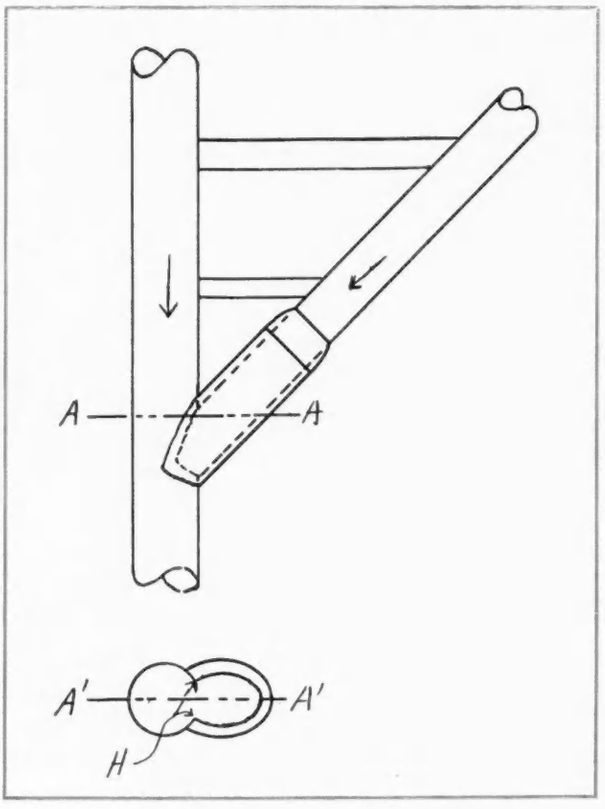
This excess pressure, confined equally and resulting in equalized tension around the circumference of a cylinder, when applied normally to the angle at H—H has only the resistance against bending of the joined steel pipe walls at that point to resist distortion.

Regarding that portion of the weld at H as a beam loaded at its center and springing from some point near the axial center of each branch, it becomes apparent that the mere joining together of the eight and six-inch lines with a conventional weld fails to provide sufficient metal to resist the load. That is, under each pump stroke—with a twin duplex pump at 35 revolutions per minute this amounts to 140 per minute or more than two reversals of the stress cycle each second—the flat Vee of the weld is alternately flattened and flexed through a slight arc. At the speed of the pump forcing oil through this junction, this reversal of stress more than 200,000 times each pumping day will in time break down even the best steel, crystallization is set up, and eventually rupture will occur.

After the second break in this same spot an additional tie was welded between the main and the branch line to insure the joint against any possibility of even minute opening and closing of the 45-degree angle between the two lines. Then, after closing the break with an arc weld and running a second bead to insure thorough closure, a sleeve of eight-inch pipe was formed with the oxy-acetylene torch to fit snugly against the main line around the junction of the six-inch, and the other end swaged down to fit closely around the branch.

After being split to facilitate placing, this was electrically welded into place and the two longitudinal seams closed. Double beads were run over all welds to make sure there would be strength sufficient to withstand the line and pump impulse pressures even if the inner weld leaked.

Referring again to the sketch, it is apparent that the main line or left side of the "hinge" in the original weld design is now reinforced by the junction of the eight-inch pipe and the shell, so that the almost microscopic but nevertheless highly detrimental bellows-like action is now resisted by two welds instead of the original one, with more than twice the metal formerly opposed to the expansive force of the pump impulse. The narrow strip of eight-inch pipe between the two welds is held at two points so closely together that any bending, if present, must occur between the two welds, or is transmitted beyond the outer weld to the wall of the pipe, where there is no weld or other structural alteration of the cylindrical pipe wall to localize the stress and promote disastrous crystallization.



*For this eight-inch line the velocity of impulse is computed as 4126 feet per second, for the six-inch at 4185 ft./sec.

Markets Steady

PRODUCT PRICES ARE HIGHER AFTER CRUDE POSTING GAINS

THE markets have continued steady despite the substantial recent improvement of prices of crude oil and products throughout the United States outside California. The immediate future is expected, however, to bring cautious testing of the higher prices.

On the favorable side of the picture are efforts being made in California to reduce that state's crude production to about 600,000 barrels daily from current output of over 680,000 barrels.

On the unfavorable side, however, is the fact the California output actually has continued excessive; while there were indications at last week's hearing of the Texas Railroad Commission that the Texas allowable might be materially increased for February.

More Crude Price Raises

The crude price structure was jacked up a little more the past week, when the Michigan posting was raised 10 cents a barrel to $1.32 effective January 14, and when Pennsylvania grade crudes were further advanced 15 cents a barrel. The Joseph Seep Purchasing Agency of the South Penn Oil Company raised the Pennsylvania postings effective January 13.

The new Pennsylvania grade prices are $2.45 for Bradford District and Allegany District oil in Bradford Transit Company lines; $2.17 for Pennsylvania grade oil in South West Pennsylvania Pipe Line; $2.12 for same grade in Eureka Pipe Line Company system; $1.97 for the Pennsylvania grade in Buckeye Pipe Line Company lines; and $1.42 for Corning grade in Buckeye Pipe Line Company system.

Schedules Revised

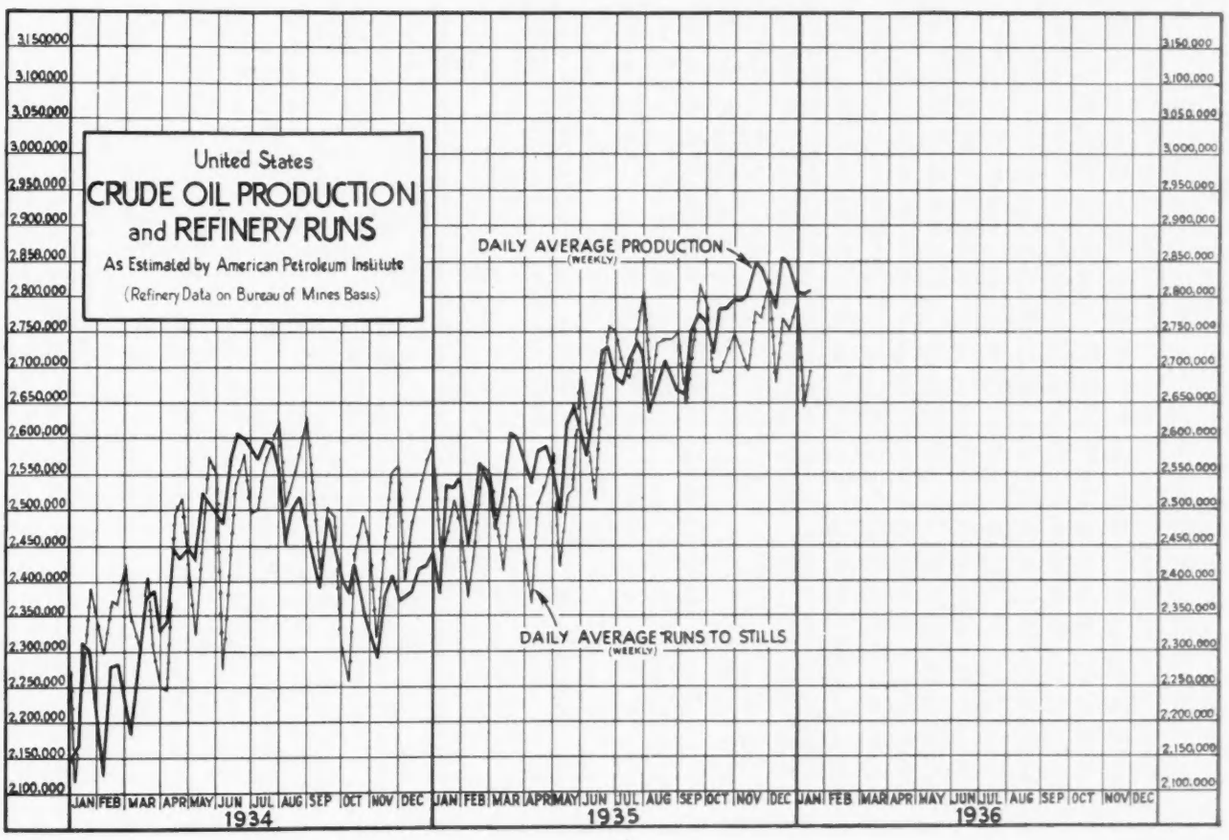
Last week also brought various revisions of the higher postings that had been announced January 9 and 10. For example, Humble Oil & Refining Company January 14 revised West and certain Southwest Texas postings five cents downward to get in line with the new prices that had been adopted by other purchasers. The competing purchasers had declined to adopt quite as high postings as the Humble company sought to establish in the areas involved. Humble's new West Texas price range is as follows: below 29 gravity 75 cents, 29-29.9 gravity 76 cents, and a 2-cent differential to 90 cents for 36 gravity and above. Pecos crude was priced at 85 cents flat, however. Darst Creek and Salt Flat were reduced 5 cents a barrel, similarly, to 97 cents. The January 14 postings for West Texas by the Humble company were subsequently adopted also by Magnolia Petroleum Company, effective January 16.

Magnolia Petroleum Company also announced a new schedule effective January 16 for North Louisiana and Arkansas. For Pine Island, Haynesville, Bull Bayou, and Cotton Valley fields, northern Louisiana, and El Dorado district (light) and Rainbow district, Arkansas, Magnolia posted as follows: below 29 gravity 86 cents, differential two cents, beginning with 29-29.9 gravity 88 cents and ending with 40 and above $1.10. The El Dorado East field and Smackover district, Arkansas, were given a flat 75 cent posting.

New crude price postings not previously mentioned in this publication include these by The Ohio Oil Company: $1.25 per barrel for Sunburst, Montana, crude, effective January 9, 1936; $1.25 for Lima grade crude, effective January 10; and a 10 cent increase effective January 9 for Princeton, Indiana, crude.

Gasoline Market Up

The markets for gasoline, wholesale and retail, have increased following the crude



price advances. Tank car prices of gasoline in the Mid-Continent are generally 3/8 to 1/2 cent per gallon higher than before the crude price increases. Third grade, below 62 octane, late last week was generally priced in East Texas at five cents a gallon at the refineries, compared with a top price of 4 5/8 cents previously. In the Group Three (Oklahoma) region and North Texas the third grade gasoline also was up 3/8 of a cent at 5 1/8 cents. Kerosene and fuel oil prices, tank car and retail, also are working upward.

Retail prices of gasoline also have improved substantially following the crude price advances. In Texas, Wyoming, and some other areas, service station postings now are a full cent higher. In the Middle West and the Middle Atlantic states the retail postings were advanced one-half cent a gallon last week.

East Texas Tank Car Shipments

Week Ending January 12, 1936

PRODUCTS	No. Cars	Estimated Gallons
Gasoline	531	4,298,989
Fuel Oil	218	2,122,504
Casinghead Gasoline	194	1,671,631
Distillate	74	599,767
Kerosene	39	313,184
Gas Oil	32	259,057
Residuum	4	32,356
Total	1,092	9,297,488
Total previous week	1,123	9,654,539
Interstate	422	.....
Coastwise	368	.....
Intrastate	302	.....
Total	1,092	.....

UNIFORM POSTING

East Texas price pegged at five cents a gallon

UNIFORM price of five cents per gallon was quoted last week by East Texas refiners for U. S. motor grade gasoline, thereby compensating the plant owners for the added cost of crude. This harmony in the gasoline price structure has been attained only on a few occasions and then for brief periods since the district developed into a major refining center, as motor fuel derived from crude of a questionable source is generally quoted at from one-half to two cents below that produced from legally produced crude.

Gasoline purchased by majors through their buying pool was advanced from 4 5/8 cents to five cents per gallon. The price hike was sufficient to offset the enlarged crude price to be borne by gasoline. However, the plant owners have not fared so well in boosting quotations on fuel oil and other heavy ends, although kerosene is working to higher levels.

Improved gasoline prices may lead to greater plant activity. There were 23 plants on the active list, according to a mid-week check by the commission, and four concerns were operating two each. Very little legal crude is available to new plants starting up, and their runs would necessarily involve mostly hot oil production and confiscated oils.

Volume of accounted for hot oil production is currently ranging from 10,000 to 15,000 barrels daily. This rate has been maintained for some weeks, and in all probabilities will continue indefinitely, as a portion of the supply is due to manipulations tolerated by state authorities.

NEW RODESSA LINE

Longview. — East Texas Refining Company, owner of a crude skimming and cracking plant east of Longview, is surveying route for a crude pipe line to the Rodessa field, situated on the Louisiana-Texas border. Confirmation has been made by an official of the company that the transportation unit is under consideration, and that a decision will be made within several weeks.

Such a carrier would require about 45 miles of trunk line. The company's 10,000-barrel capacity plant at Longview junction is equipped to process Rodessa crude, which would supplement the limited supply of East Texas crude now available. Other East Texas plants with cracking facilities would be offered space in the Rodessa line, according to reports.

HOT OIL PREACHERS

Austin, Texas, Jan. 17.—A new angle in the hot oil business in East Texas has developed with churches seeking tenders to move oil "in the name of the Lord." Last week two Dallas ministers appeared before the Texas Railroad Commission asking that a tender be approved for the movement of 256,000 barrels of oil which they said would raise sufficient funds to lift the mortgages on their churches. The oil would be given to the church, they said, if the tender could be obtained. The commission had previously determined that the oil was not allowable production and had denied tenders.

Urged to approve the tenders and then to attend the services for "burning the mortgages," the commissioners declined. The applicants withdrew when one commissioner pointed out that he had taken the oath to uphold the law, and that he did not believe his violation of that oath would be approved either by the Lord or the preachers.

TO HEAR ATTACKS

Austin. — Further suits attacking Railroad Commission gas orders will be heard in Federal Court next week.

In Dallas on January 21, Federal Judge Atwell will hear the state's motion to dismiss temporary injunctions obtained by American Natural Gasoline Corporation, Smith Brothers Refinery, and Skelly Oil Company.

At Tyler on the same day, Federal Judge Randolph Bryant will hear argument in a suit brought by the Cargray Corporation against the Railroad Commission gas proration order for the Panhandle area.

A three-judge federal court will be convened on January 31 to hear the arguments in the suit brought by F. C. Henderson Company, attacking the validity of that section of the law regulating the production of sour gas.

Summary of Wells Completed in the United States Week Ending January 11, 1936

	Completions	Oil Wells	Gas Wells	Fail-Failures	Initial Production	Total Completions 1936	Total Completions this date 1935
Alabama	...	...	...	...	.....	...	...
Arkansas	4	1	...	3	50	4	13
California	14	11	3	...	3,150	31	21
Colorado	...	...	...	...	.....	...	...
Illinois	...	...	...	...	.....	...	3
Indiana	...	...	...	...	.....	...	5
Kansas	32	18	2	12	23,717	39	52
Kentucky	....	....	....	....	.....	....	4
Louisiana	14	8	3	3	4,135	26	37
Michigan	17	10	2	5	855	54	14
Mississippi	....	....	....	....	.....	....	2
Montana	2	2	....	....	90	6	4
New Mexico	5	3	2	....	8,070	11	5
New York	....	....	....	....	.....	....	....
Ohio	26	8	10	8	73	53	59
Oklahoma	71	49	4	18	120,863	101	83
Pennsylvania	....	....	....	....	.....	....	7
Texas	205	143	13	49	298,085	427	425
Utah	....	....	....	....	.....	....	....
West Virginia	14	....	8	6	.....	34	15
Wyoming	1	1	....	....	774	3	1
Total this week	405	254	47	104	459,862	789	750
Total last week	384	269	34	81	496,920	....	....
Total this year	789	523	81	185	956,782	....	....

Comparison of Permits Granted for New Wells

STATE—	Week Ending Jan. 11	Total this Mo.	Total this Year	Total this Date Last Year	1935 Year Total
Arkansas	1	4	4	13	70
California	10	16	16	13	925
Louisiana	26	43	43	28	846
Kansas	29	47	47	57	1,204
Michigan	6	16	16	21	749
Oklahoma	43	72	72	69	2,311
Texas	220	414	414	453	10,809
Total	335	612	612	654	16,964

OUTPUT HIGHER
U. S. production is up 15,000 barrels a day

UNITED STATES crude oil production last week (ending January 18) was about 15,000 barrels a day higher than in the previous week, and averaged 267,700 barrels a day more than the amount recommended for January by the United States Bureau of Mines. The new production rate was 2,826,900 barrels a day.

The comparatively small increase over the previous week's output was accounted for chiefly by Oklahoma. That state's production was up 30,000 barrels at 506,150 barrels daily, due to increases at Oklahoma City, Fitts, and in the Seminole area. The Oklahoma output for the week was 25,000 barrels per day above the Bureau of Mines estimate of demand.

California production was but slightly changed, averaging 683,000 barrels daily, or 2000 barrels a day more than in the preceding week. The Bureau of Mines recommendation for California in January is only 517,800 barrels daily, and producers of the state are striving to reduce output at least to 600,000 barrels daily.

Texas output was practically the same as in the previous week, averaging 1,035,700 barrels daily, or 18,000 barrels a day more than the Bureau of Mines estimate of demand.

Louisiana production of 178,500 barrels per day was about 2500 barrels higher than in the previous week, and 46,000 barrels per day more than the government recommendation.

Kansas showed a decrease of about 4000 barrels, in averaging 139,675 barrels daily.

GROUP 3 HOPEFUL
Higher refined prices in area are expected

ANNOUNCEMENT by Standard Oil Company (Indiana) that effective Friday morning, January 17, it would raise tank wagon and retail station prices one-half cent per gallon was expected to be the forerunner of similar increases throughout Group 3 territory.

Jobbers continued to stock up very slowly through contract shipments, but no great amount of activity was noted in the spot market, since most buyers seem to feel that prices will not be increased again at an early date.

Although price quotations in general pegged third grade U. S. motor, 62 and below octane, at 5⅛ cents per gallon on the spot, it was reported that small amounts of material were being offered for less. One such offering was said to have been for as low as 4⅞ cents.

Burning oils continued weak, as fair and reasonably warm weather prevailed over a large part of the marketing territory. Kerosenes were finding difficulty in retaining the strength gained during the past few weeks. As a whole stocks at bulk terminals are considered to be at about or slightly below normal for this part of the season, and day to day buying probably will be the rule at least for the next sev-

United States Crude Oil Production
Estimates Compiled by THE OIL WEEKLY

DISTRICT OR STATE	BARRELS DAILY FOR WEEK ENDING January 18	January 11
TEXAS—		
Texas Panhandle	58,200	60,500
North Texas	56,700	56,800
West Central Texas	25,200	24,900
West Texas	146,600	149,200
East Central Texas	47,500	44,400
*East Texas Field	431,800	432,200
†South Texas	65,600	62,100
†Texas Gulf Coast	204,100	205,200
*Total Texas	1,035,700	1,035,200
OKLAHOMA—		
Oklahoma City	141,075	133,200
Seminole Area	122,325	116,250
Tatums	3,700	3,750
Lucien	10,650	10,200
Fitts	39,150	33,050
Edmond	6,600	7,175
Others	182,650	183,000
Total Oklahoma	506,150	486,925
KANSAS—		
Ritz-Canton	7,150	7,275
Voshell	3,375	3,400
Nikkel-Hollow	5,025	5,125
Sedgwick	6,050	6,350
Oxford	7,375	7,600
Burrton-Haury	12,675	13,100
Lorraine	9,275	11,950
Others	88,750	88,550
Total Kansas	139,675	143,350
LOUISIANA—		
North Louisiana	51,200	50,450
Louisiana Gulf Coast	127,300	125,500
Total Louisiana	178,500	175,950
ARKANSAS	30,075	29,950
CALIFORNIA—		
Long Beach	77,500	77,000
Santa Fe Springs	54,000	54,500
Huntington Beach	43,000	42,500
Dominguez	30,000	29,500
Inglewood	16,500	15,000
Ventura Avenue	41,000	39,000
Seal Beach	7,500	13,000
Midway-Sunset	62,500	62,500
Elwood	15,500	16,000
Kettleman Hills	98,000	98,000
Mountain View	34,000	34,500
Playa del Rey	16,000	16,000
Others	187,500	183,500
Total California	683,000	681,000
MOUNTAIN STATES—		
Wyoming	35,500	37,450
Montana	12,600	12,500
Colorado	4,100	3,900
Total Rocky Mountain States	52,200	53,850
NEW MEXICO	58,700	59,100
EASTERN STATES	102,300	101,200
MICHIGAN	40,600	44,800
*Total United States	2,826,900	2,811,325
*Surreptitiously produced oil in East Texas, not included in above figures, estimated at	10,000	15,000
Grand Total, including surreptitious production	2,836,900	2,826,325

† Coastal District of South Texas is included with Texas Gulf Coast.

Crude Runs to Stills; Finished and Unfinished Gasoline; Gas and Fuel Oil Stocks, and Cracked Gasoline Production, Week Ended January 11, 1936

(Figures in thousands of barrels of 42 gallons each)

DISTRICT	Daily Refining Capacity of Plants			Crude Runs to Stills		Stocks of Finished Gasoline			(*) Stocks of Unfinished Gasoline	(†) Stocks of Other Motor Fuel	Stocks of Gas and Fuel Oil	Daily Charging Capacity of Cracking Units			Cracked Gasoline Production
	Potential Rate	Reporting		Daily Average	% Operated	At Refineries	Bulk Term., in Trans. & Pipe Lines	Total at Refys. Term. etc.				Potential Rate	Reporting		Daily Average
		Total	%										Total	%	
East Coast	612	612	100.0	452	73.9	4,099	8,748	12,847	854	145	8,352	534	534	100.0	98
Appalachian	154	146	94.8	92	63.0	1,148	864	2,012	232	45	834	79	78	98.7	21
Ind., Ill., Ky	442	424	95.9	312	73.6	4,654	3,714	8,368	674	50	3,554	349	348	99.7	94
Okla., Kans., Mo	453	384	84.8	271	70.6	3,394	2,055	5,449	567	550	4,331	256	228	89.1	59
Inland Texas	330	160	48.5	89	55.6	1,066	68	1,134	175	1,500	1,469	148	105	70.9	22
Texas Gulf	680	658	96.8	587	89.2	4,750	245	4,995	1,715	140	9,989	399	393	98.5	125
Louisiana Gulf	169	163	96.4	123	75.5	827	573	1,400	235	.....	4,323	77	74	96.1	28
North Louisiana—Arkansas	80	72	90.0	36	50.0	227	67	294	43	140	616	46	44	95.7	9
Rocky Mountain	97	60	61.9	40	66.7	904	.....	904	95	90	752	46	39	84.8	11
California	852	789	92.6	499	63.2	8,051	2,333	10,384	1,181	1,500	68,868	280	280	100.0	62
TOTALS WEEK: January 11, 1936	3,869	3,468	89.6	2,501	72.1	29,120	18,667	47,787	5,771	4,160	103,088	2,214	2,123	95.9	529
January 4, 1936	3,869	3,468	89.6	2,453	70.7	28,812	18,476	47,288	5,523	4,125	‡103,965	2,214	2,123	95.9	511

Below are set out estimates of Crude Runs and Cracked Gasoline Production on B. of M. Basis for Week of January 11, 1936, compared with January, 1935 Bureau figures.

Estimate B. of M. Basis, January 11, 1936	2,695		565
Estimate B. of M. Basis, January 4, 1936	2,645		545
U. S. B. of M., January, 1935: Daily Average Crude Runs	2,434	U. S. B. of M., January, 1935: Daily Average Cracked Production	509

(*) Amount of Unfinished Gasoline contained in Naphtha Distillates.
(†) Estimated. Includes Unblended Natural Gasoline at refineries and plants; also Blended Motor Fuel at plants.
‡ Revised in East Coast.

eral weeks. Naturals were steady with a tendency to fall off slightly.

Prices to wholesale jobbers with bulk storage or to the trade in tanker lots of 8000 to 10,000 gallons f.o.b. refinery and exclusive of all federal, state and other taxes and handling charges, were thought to be approximately as follows:

U. S. motor, 62 and below octane, 5⅛ to 5⅜ cents; 63 to 70 octane, 6 to 6¼ cents; 71 and above octane, 6⅛ to 6⅜ cents; 60-62, 400 e.p., 62 and below octane, 5⅛ to 5⅜ cents; 63 to 70 octane, 400 e.p., 6 to 6¼ cents; 64-66, 375 e.p., 5⅛ to 5⅜ cents; 68-70, 350 to 360 e.p., 5⅜ to 5⅝ cents.

The 26-70 naturals, 3½ to 3⅝ cents.

Burning oils—42-44 water white kerosene, 3⅝ to 3¾ cents; 41-43 water white kerosenes, 3⅛ to 3⅝ cents; 38-40 prime white distillate, zero test, 3⅜ to 3½ cents; 38-40 straw, zero test, 3¼ to 3⅜ cents; 32-36 straw gas oil, zero test, 2¾ to 3 cents; and 32-36, dark industrial gas oil 2⅝ to 2⅞ cents.

Fuel oils—16 to 30 gravity, 60 cents to $1.10 per barrel.

PLAN CURTAILMENT

California independents in hole on gasoline

THE reduction of retail gasoline prices in Southern California January 10, placed the independent refiners and leaders in a hole. Formerly they had been underselling major companies from 2½ to 3½ cents a gallon. Under new major company prices, undersellers have had to reduce the spread. For instance, major companies' third grade is selling at 11½ cents. Smaller concerns are now selling at 9½ cents to 11½ cents. At this low price, after deducing the 4-cent tax, the net back to the refiner is ranging from 3½ to 4½ cents a gallon. Since natural gasoline is selling at 5½ to six cents a gallon and since refinable crude has a posted price of one dollar a barrel, as an average, the plight of the independent refiner is not so good.

The tanker rate from California to East Coast points is up to 55 cents a barrel for dirty bottoms, clean bottoms is up to 75 cents, and for this reason California products cannot be moved to East Coast points and meet competitive prices.

California's salvation rests with the producers, and if they refuse to reduce production to a point near demand, they will have to suffer. If daily production were reduced to 600,000 barrels a day in California, a crude oil price increase could be expected in the very near future. With production running close to 680,000 barrels a day the producer cannot expect relief, as purchasing companies will not increase the posted price if they know they must add to storage.

Seek Reduction

The Central Committee of the California Oil Producers of California at a meeting held in Los Angeles January 14, decided that it would be necessary to reduce the production of the state about 80,000 barrels a day to about 600,000 barrels if the oil industry is to be stabilized. The committee decided that if the storage facilities of the state are not to be taxed, production must be reduced.

The committee named a subcommittee composed of R. H. Garrison, Lloyd Williamson, A. C. Rubel, Warner Clark, Emil Kluth, William H. Geis and Joseph Jensen. This committee will canvas the situation and report back to the central committee in an effort to place in effect new field allocations about January 20.

It is unofficially reported that major and larger independent companies of the state are willing to cooperate 100 percent, which would mean that Kettleman Hills production would be reduced between 75,000 and 80,000 barrels compared to previous production of close to 98,000 barrels a day.

Other fields which have been overproducing would also be expected to reduce production to the required amount.

Washington, D. C.—Receipts of crude oil at refineries during November aggregated 83,183,000 barrels, and runs to stills totaled 83,180,000 barrels, the daily average of 2,773,000 barrels for the latter representing a gain of 27,000 barrels over October, according to the monthly report of the Bureau of Mines.

CRUDE OIL PRICE QUOTATIONS

(Figures Represent Basic or Flat Prices—Revised to January 17, 1936)

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Oklahoma-Kansas	28—$0.94	2¢	40—$1.18	1- 9-36
N. and N.-C. Texas	28— .84	2¢	40— 1.08	1- 9-36
Texas Panhandle				
Gray County	34— .86	2¢	40— .98	1- 9-36
Carson-Hutchinson	34— .81	2¢	40— .93	1- 9-36
West Texas				
Ector, Pecos, W'kler	29— .76	2¢	36— .90	1-14-36
Crane, Upton, Howard and Glasscock				
West Central Texas	28— .84	2¢	40— 1.08	1- 9-36
East Central Texas	28— .91	2¢	40— 1.15	1- 9-36
East Texas	*1.15			1- 9-36
Texas Gulf Coast				
Anahuac-Dickinson	30— 1.04	2¢	40— 1.24	1- 9-36
Conroe	35— 1.24	2¢	40— 1.34	1- 9-36
Tomball	*1.30			1- 9-36
Cleveland	*1.00			1-11-34
†Goose Creek, Hull Liberty, Orange, Pierce Junction, Moss Bluff, Raccoon Bend, Sour Lake, Spindletop, Sugarland, West Columbia, Humble, Rabbe Ridge	Below 17— .88	2¢	34— 1.22	1- 9-36
South and S. W. Texas	Below			
Refugio (Light)	17— .88	2¢	34— 1.22	1- 9-36
Refugio (Heavy)	*.90			1- 9-36
Saxet	*.90			1- 9-36
Mirando	*.85			1- 9-36
Pettus	*1.25			1- 9-36
Salt Flat	*.97			1-14-36
Darst Creek	*.97			1-14-36
Port Lavaca	*.97			
Plymouth	*.90			12-17-35
Arkansas				
El Dorado (Light) and Rainbow	25— .78	2¢	40— 1.10	1-10-36
El Dorado East Field and Smackover	*.75			1-10-36

DISTRICT	Low Grav.	Dif.	High Grav.	Date
North Louisiana	25—$0.78	2¢	40—$1.10	1-10-36
Urania	*.97			1-10-36
South Louisiana	Below			
Lockport	19— .92	2¢	34— 1.22	1- 9-36
Iowa, Cameron Mds.	Below 19— .82	2¢	34— 1.12	1- 9-36
Rocky Mountain States				
Salt Creek	29— .94	2¢	40— 1.18	1-10-36
Elk Basin	*1.28			1- 9-36
Grass Creek (Light)	*1.28			1- 9-36
Grass Creek (Heavy)	.58			1- 9-36
Big Muddy	*1.11			1- 9-36
Rock Creek	*1.12			1- 9-36
Sunburst	*1.25			1- 9-36
Lance Creek	*.90			1- 9-36
Osage	*1.08			‡
Cat Creek	*1.07			8-25-33
Cut Bank	*1.45			9-29-33
Pondera	*1.05			9-29-33
Hog Back, N. M.	*1.00			9- 8-33
Lea County, N. M.	*.75			9-29-33
Mid-West States				
Lima	*1.25			1-10-36
Illinois	*1.23			1- 9-36
Princeton	*1.23			1- 9-39
Western Kentucky	*1.23			1- 9-36
Pennsylvania				
Bradford	*2.45			1-13-36
Sw. Pa. Pipe Line	*2.17			1-13-36
Eureka Pipe Line	*2.12			1-13-36
Buckeye Pipe Line	*1.97			1-13-36
Corning Grade	*1.42			1-13-36
Michigan				
Central Michigan	*1.12			11- 7-35
Muskegon	* 70-1.00			12-31-32
Canada				
Petrolia	*2.10			9- 9-33
Oil Springs	*2.17			9- 9-33

* All gravities—flat rate.
† Gulf Coast prices as posted by Humble Oil & Refining Company.

* All gravities—flat rate.
‡ Average price, all oil sales being to small refineries.

MAJOR PRICE CHANGES

	Penna. (Nat. Tr.)	Mid.-Cont. (36 Gr.)	Calif. (26 Gr.)
May 22, 1933	Up 10	.....	.....
June 19, 1933	Up 10	Up 19	.....
June 26, 1933	Up 10	.....	Up 9-12
July 6, 1933	Up 13	Up 10	.....
July 17, 1933	Up 15	.....	.....
July 28, 1933	Up 15	.....	.....
August 11, 1933	Up 10	.....	.....
August 24, 1933	.....	Up 10	.....
August 30, 1933	Up 15	.....	.....
September 6, 1933	Up 10	Up 10	Up 15
September 8, 1933	.....	Up 15	.....
May 1, 1934	Up 10	.....	.....
November 6, 1934	Cut 25	.....	.....
December 6, 1934	Cut 25	.....	.....
January 4, 1935	Up 15	.....	.....
February 4, 1935	Up 15	.....	.....
May 16, 1935	Cut 15	.....	.....
June 26, 1935	Cut 15	.....	.....
July 16, 1935	Cut 10	.....	.....
August 29, 1935	.....	.....	Cut °46
September 6, 1935	Up 5	.....	.....
October 29, 1935	Up 15	.....	.....
November 1, 1935	.....	.....	Up °28
November 18, 1935	Up 15	.....	.....
December 6, 1935	.....	.....	Up °9
January 9, 1936	.....	Up 10	.....
January 13, 1936	Up 15	.....	.....

CRUDE PRODUCTION TAXES

Oklahoma—Five percent of gross value less royalty interest.

Texas—Two cents or 2 percent, whichever is higher.

Louisiana—From four to 11 cents a barrel, depending upon gravity.

Arkansas—2.6 percent of gross market values.

Montana—Two percent of gross value at well and 3/8 of 1c per barrel.

Wyoming and New Mexico—Production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

* All gravities—flat rate.
° Signal Hill 26 gravity.

CALIFORNIA OIL PRICES

(All gravities above those quoted take highest prices of that field
Effective December 6, 1935)

Gravity	Signal Hill	Seal Beach Alamitos Heights	Huntington Beach	Inglewood	Playa Del Rey	Olinda Brea Canyon	Athens Rosecrans Dominguez	Elwood Terrace	Torrance	Richfield	Whittier La Habra	Montebello	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River Round Mountain	Mountain View	Midway Sunset Elk Hills Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge
14-18.9	$.75	$.74	$.73	$.74	$.75	$.71	....	....	$.75	$.71	$.71	$.72	$.73	....	$.65	...	$.65	$.65	$.65	....
19-19.9	.75	.74	.74	.77	.76	.75	....	....	.77	.71	.71	.72	.73	....	.65	$.65	.66	.68	.66	.65
20-20.9	.76	.74	.76	.79	.79	.77	....	....	.78	.71	.73	.72	.73	....	....	.65	.68	.71	.67	.65
21-21.9	.78	.74	.78	.81	.81	.79	....	....	.80	.71	.75	.72	.75	$.73	....	.65	.71	.73	.69	.65
22-22.9	.80	.74	.80	.82	.84	.81	....	....	.81	.73	.77	.72	.77	.73	....	.66	.74	.75	.71	.67
23-23.9	.82	.77	.82	.84	.86	.83	$.79	....	.83	.75	.79	.74	.79	.73	....	.67	.77	.77	.73	.69
24-24.9	.84	.80	.84	.86	.88	.84	.81	F.O.B. Ship	.84	.77	.80	.76	.81	.75	....	.69	.80	.80	.75	.71
25-25.9	.86	.82	.86	.87	.91	.86	.83		.86	.79	....	.78	.82	.77	....	.71	.83	.82	.77	.73
26-26.9	.88	.85	.88	.89	.93	.88	.86		.88	.81	....	.80	.84	.79	....	.73	.86	.85	....	....
27-27.9	.90	.88	.90	.91	...	.90	.88		...	.83	....	.82	.86	.82	....	.76	.88	.88	....	....
28-28.9	.92	.90	.91	.92	...	.92	.90		...	.85	....	.83	.88	.84	....	.78	.91	.90	....	....
29-29.9	.94	.93	.93	.94		....	.93	....	...	.87	....	.85	.90	.86	....	.80	.94	.92	....	....
30-30.9	.96	.95	.95	.95		....	.95	....	...	...	....	.87	.92	.89	....	.83	.97	.94	....	....
31-31.9	....	....	...	.97		....	.97	....	Kettleman Hills			.89	.94	.91	....	.85	.99	...	....	....
32-32.9	...	....	...	.99		....	1.00	....				.91	.96	.93	....	.87	1.02	...	....	....
33-33.9	...	....	...	...		....	....	$.99	$.95			.93	.98	.95	....	.89	1.04	...	....	....
34-34.9	...	....	...	...	F. O. B. Pipe Line	....	....	1.01	...	.97	....	.95	1.00	.98	....	.91	....	....	....	....
35-35.9	...	....	...	...		....	....	1.03	...	.99	....	.97	...	1.00	....	....	....	....	....	....
36-36.9	...	....	...	...		....	....	1.05	...	1.02	....	.99	...	1.02	....	....	....	....	....	....
37-37.9	...	....	...	...		....	....	1.07	...	1.05	....	1.00	...	1.04	....	....	....	....	....	....
38-38.9	...	....	...	...		....	....	....	...	1.08	....	1.03	...	1.07	....	....	....	....	....	....
39-39.9	...	....	...	...		....	....	....	...	1.11	....	1.05	...	....	....	....	....	....	....	....
40-40.9	...	....	...	...		....	....	....	...	....	....	1.07	...	....	....	....	....	....	....	....

Edited by
WM. V. GROSS, Associate Editor

Poland's Exploration

CAMPAIGN STARTED IN 1935 TO GAIN MORE IMPETUS THIS YEAR

Government policy and oil company activities in Poland will be directed in 1936 at stopping the decline in crude production which has been in evidence since 1922, according to information received January 15 by THE OIL WEEKLY in answer to a query sent to Lwow.

This is merely a continuation and enlargement of the exploratory campaign initiated at the beginning of 1935 and resulting during the past year in the discovery of several potentially productive areas.

With regard to the outlook in Poland, so far as drilling activities are concerned, it was stated that wildcat activity in 1936 will be greater than in 1935, which, in turn, represented a substantial increase over the activity of 1934.

Highlights of 1935

Some highlights of 1935 wildcat drilling in Poland show the following results:

Polmin Company, drilling in Dolina, near Bolechow, encountered at 480 meters (1579.2 feet) a sand capable of yielding a yellow, high grade oil. This occurred after the operators had drilled through salt topped at 255 meters and extending on down to 460 meters, or about 66 feet above the point at which the productive oil horizon was logged. The well is drilling deeper.

Gazolina Company, drilling a wildcat test in Balicze, encountered gas showings recording pressures ranging from 220 to 367 pounds in Miocene sandstones encountered at 170 meters and extending down to 450 meters, or 1480.5 feet.

Important showings of gas have been reported recently in a wildcat being drilled at Zdziary, near Tarnow, in the western part of Galicia. This well, drilled by "Polmin 00," at latest reports had passed 800 meters (about 2610 feet).

There are two other actively drilling wildcats of importance drilling in Poland. North of Stryj, in Wownia, Malopolska Company is drilling below 1179 meters on a test. In Uhersko, Polmin Company is attempting an extension of the old Daszawa to the west. This latter test is drilling below 1170 meters, better than 3600 feet, which is a relatively deep well for Poland.

Most of Poland's drilling during 1935 was in proven fields in the Carpathians,

Natural gasoline plant in Lake Maracaibo, Venezuela, 1½ kilometers from shore.

and the wildcat activity was characterized by lack of important discoveries, so far as commercial production of oil is concerned.

Role of Pioneer

The uninterrupted downward trend of production in Poland was one of the main conditions responsible for creation of Pioneer Oil Company, S.A., a corporation backed by the government and formed for the purpose of pooling funds of Polish operators to bear the expense of a prolonged wildcat campaign. In addition to drilling activities, its work includes geology and geophysics.

Specifically, the purpose of Pioneer Oil Company, S.A., is to carry out geological surveys in those parts of the Carpathians and of the Carpathian Foreland which may be considered as potential oil bearing areas, to drill test wells, to support drilling activities of other companies, and to support and cooperate in the development of Polish oil field technology.

Present activity of Pioneer Oil Company, S.A., is directed principally at the discovery of new reserves to check the downward trend of Poland's production. It is thus that special attention will be given during 1936 to the Carpathian Foothills belt, considered in Poland as having the greatest possibilities of commercial production. It should be mentioned, however, that oil indications have been found in other parts of Poland recently—such as those found at Kujavie in the northern part of the country.

Foothills Important

While the geological survey of the Carpathian Foothills belt began only a few years ago, considerable interesting and valuable data has been compiled which will be utilized in deciding on locations for tests to be drilled by government and private enterprise. The region is covered by alluvial deposits and outcrops of the older formations are scarce, according to a paper recently prepared by Dr. O. V. Wyszynski, who offers this condition as justification for the necessity for use of test drilling and geophysics.

The area covered up to the beginning of 1936 by Pioneer Oil Company, S.A., lies between the Rumanian frontier and the meridian passing through Przemysl and lies north of the well known Boryslaw oil field. Special attention was given to that part of the territory covered lying immediately north of Boryslaw field.

Results of pre-drilling exploration work done in 1935 account for the careful mapping of more than 100 square kilometers and survey with seismic reflexion methods of more than 1500 square kilometers. In addition, 27 core drilling undertakings were completed and the cores examined chemically and for foraminifera by laboratories of Pioneer Oil Company, S.A.

In the western part of the Foothills area, regions were investigated with magnetic and pendulum methods; other electrical methods also were used.

2000-Foot Miocene Section

Data available at the close of 1935 allows the Polish geologists and geophysicists to state with reasonable certainty that the Carpathian Foothills belt, situated between the Carpathians and the Podolian plateau, is comprised largely of Miocene rocks with an average thickness in excess of 2000 feet, composed in the main of marls, shales and sandstones. The southwest portion of this belt adjacent to the Carpathians is intensively faulted, while the northern part has a gentle tectonic feature.

The oil showings encountered during 1935 have been confined to faulted section of the Foothills area, while the gas showings with commercial possibilities encountered in 1935 have belonged primarily to the northern part.

The gas field of Daszawa, it may be remembered (see THE OIL WEEKLY of March 18, 1935), is situated in the gently faulted part of this large belt of Miocene. Besides Daszawa, a prominent illustration of the region's commercial possibilities, existence of gas has been reported lately in several points: the wildcat of Pioneer Oil Company near the Rumanian border, in the test well drilling in Kalusz, and in the wildcats near Balicze. All gas showings of these various wildcats have been logged in Tortonian age formations and all are in the gently folded northern portion of the Foothills belt.

Aside from other independent operators in Poland, which are expected to complete more test wells in 1936 than they did in 1935, Pioneer Oil Company has already indicated it will carry on the exploratory work at a greater pace during the current year. For this organization's preliminary exploration staff in 1935, the following personnel was enrolled: 11 field geologists, a consulting geologist from Krakow, various members of the geological department at the University of Lwow, two petrographers, one chemical engineer, one paleontologist, two magnetic survey observers, two pendulum engineers and two crews of conventional size for operation of reflexion seismographs. Besides the above men, Professor Heiland of Golden, Colorado, U.S.A., was retained.

MEXICAN STRIKE

After sustaining a loss estimated at 40,000 pesos ($10,000 U. S. currency) caused by a 24-hour strike called at 10 a.m. January 9 by the "Reds," a labor syndicate, operations were resumed at 10 a.m. January 10 at the Tampico, Mexico, refinery of Compania Mexicana de Petroleo "El Aguila," S.A., the largest refinery in Mexico.

The strike was one of the most unusual ones ever called in Mexico, involving a protest against a decision of the Federal Labor Board of Mexico and not against "El Aguila." For years laborers at the plant have enrolled in one of two existing labor organizations known locally as the "Reds" and the "Whites." Three years ago three Whites were accused of participating in the assassination of a Red leader. After considerable litigation, which eventually reached the Supreme Court of Justice of that country, the men were acquitted. Recently the Federal Labor Board ordered the company to reinstate the men in their old positions—positions which had been abolished several months ago. The strike, initiated and called by the Reds, was in protest against the labor board's order. Incidentally, El Aguila had to re-employ the men.

SANCTIONS

One of the matters scheduled for consideration at the meeting of the League of Nations in Geneva, Switzerland January 20 is the proposal of leaders antoganistic to Italy's campaign in Ethiopia that an oil embargo be declared in effect against Italy.

This same question has come up for consideration at previous meetings of the League with the result in each instance of deferring action. France and England have taken the lead in efforts to have the oil sanction established against Italy, but their efforts have not met with complete approval of the other members of the league, some of which have definitely gone on record as being opposed to such a measure. Others have intimated their entrance into such an agreement as a means of precipitating solution of the Italo-Ethiopian problem hinges on the stand taken by the United States, which is not a member of the league.

Press dispatches of the past week seem to indicate both England and France are not enthusiastic over prospects of getting the oil sanction shoved through January 20 as enforcement of such has possibilities of leading to a European war. In fact, Anthony Eden, England's foreign secretary, will go to the meeting with instructions to support further sanctions if the league votes them, but the British diplomatic corps wishes him to emphasize that any British action in this connection will only be collective, along with other members of the league.

Word received from Krosno, Poland, is to the effect that preparations are being made to inaugurate oil mining in the old Lipinki field of Poland.

NATURAL GAINS

Producers' stocks lower at end of November

Washington, D. C.—A further gain in natural gasoline production in November, from 150,108,000 gallons in October to 151,116,000 gallons, with the daily average output of 5,037,000 gallons at the highest point since May, 1931, is reported by the Bureau of Mines.

Production in the Oklahoma City and Panhandle fields increased materially during the month, it was stated, but the output in East Texas was somewhat lower, as was that at Kettleman Hills, although the latter was higher on a daily average basis. Generally, however, it was said, the gain in output in November was well distributed among the producing states.

Stocks of natural gasoline continued to decline, with the total dropping from 184,128,000 gallons October 31 to 164,640,000 gallons November 30. The reduction was entirely continued to stocks at plants and terminals, holdings at refineries showing a slight increase.

Exports of natural gasoline increased in November to 10,277,000 gallons after having declined slightly in October, it was reported.

Want More Oil

[*Continued from page 8*]

sible result is to eliminate the small operator from the industry."

Charles I. Francis, attorney for Pure Oil Company, declared that no reputable engineer would object to the inclusion of an acreage factor as a matter of equity. He pointed out that the majority of the independents favored some acreage factor, and suggested that the commission compromise between the two extremes and allow some weight to be given to acreage in each proration order issued.

After about two hours of argument, Commission Chairman Thompson brought the question to a close.

"It seems to me that it all boils to this." He said. "If you could persuade the commission to write an order based on acreage it could be sustained, because the commission found it reasonable."

The new potential map of the East Texas field upon which allowables for all wells will be based was presented at the hearing. Tests began in October and completed in January form the basis of this map.

Since October tests on 64 key wells have been made, and the new map is contoured on the results of these tests.

The commission also selected 61 dry holes on the west and north sides of the field and 64 dry holes on the east side of the field, which serve to define the extreme limits of the field as a whole.

Between these wells and the first line of producers the first contour line is located at a point where no production is expected. The remaining contours within this zero line are run from well to well among the 64 wells upon which potential tests were made.

V. E. Cottingham, Commission Geologist, stated that the new potentials were very similar to results obtained under earlier tests.

The average pressure in East Texas declined 5.4 pounds from December 12 to January 12, Cottingham testified. This was an average decline of .399 pounds per million barrels produced.

A cut in the allowable to attempt to reduce this decline was recommended by Cottingham. He said that the average daily allowable during the elapsed period had been 436,102 barrels per day, and recommended that it be reduced to 425,000 barrels per day.

Other Areas

The hearing to consider revision of the method of allocation in the Yates field was postponed until the February meeting at the request of operators on both sides. An increase of 1500 barrels in the allowable of the McCamey field was requested by Texas Pacific Coal & Oil Company. This would mean an allowable of 7920 barrels per day. The basis of this request was to place McCamey on a parity with other fields in the area producing from the Permian Basin. The Gulf requested additional oil from the North Ward field so that 12,500 barrels daily might be delivered to their Sweetwater refinery. The company is now obtaining 4800 barrels daily.

An increase of 2000 barrels was requested for the Sayre field in Winkler County, and an increase of 1750 barrels for the Church and Fields pool was asked for by The Texas Company.

A proportionate increase for the Gulf-McElroy field, which is immediately adjacent, was requested by operators there.

New completions in the Bay City pool justified a higher allowable there, according to evidence presented by Skelly Oil Company. Representatives of Skelly asked for a hearing upon which to fix rules for operating in that field.

Conroe operators asked an increase of 20,000 barrels daily in the allowable for that field, which they contend is essential to supply the current demand. Unless the oil is available at Conroe, it was testified, purchasers will have to obtain it outside Texas. This would mean a total field allowable of 55,000 barrels daily, approximately.

An increase of 1500 barrels per day for the Samfordyce field was requested by Ralph E. Fair, Incorporated. At present there are 115 wells with an average allowable of 35 barrels per well. Carl McLynn, attorney for Fair, stated that Coastal Refinery, Incorporated, wanted 5000 barrels per day from the field.

An increase of 1000 barrels per day in the allowable for the Cayuga field was requested by Tide Water and Seaboard Oil Company. This would mean a total allowable of 4720 barrels per day for the field.

SALT CREEK ROYALTY

Government gets lower premium under new bid

Washington, D. C.—Government royalty oil received from the Salt Creek, Wyoming, field during the current year will be sold to Socony-Vacuum Oil Company and Sinclair Wyoming Oil Company at a premium of two cents per barrel above the highest field price for oil of equal or lower gravity in Oklahoma and Kansas, or Wyoming, whichever is higher, under a contract announced January 14 by Secretary of the Interior Harold L. Ickes.

The two companies, bidding jointly, were the only ones to offer proposals in response to an invitation for bids issued November 1, last.

The companies accompanied the bid for the oil at a two-cent premium with an alternative offer of a three-cent premium for a three-year contract, but in view of the fact that both figures were well under the five-cent bonus paid by White Eagle Oil Corporation and Sinclair Wyoming Oil Company, which held the contract for 1935, it was considered preferable to accept the one-year offer.

"It is reasonable to believe that stabilized conditions in the petroleum industry at the close of 1936 and the reduction of supplies now held in storage by private parties will enable the government to dispose of its royalty oil at a substantially higher price during 1937," it was explained by the secretary.

A surety bond of $200,000 has been posted by the two companies to insure full and complete compliance with the terms of the contract.

EXPECT CHANGE

Better East Texas wells likely to get an increase

Austin.—Higher allowables for best wells in the East Texas field are expected when the order for February is released next Tuesday. The increase will result from installation of the new potential map introduced at the hearing before the commission last Thursday.

While the top allowable for the field is not likely to be increased and a reduction of 10,000 barrels is anticipated, an increase in the factor of 2.7 percent of the hourly potential of the field will be needed to effect an allowable of 425,000 barrels per day. This is the amount commission engineers recommended be produced.

The total field potential on January 11 was 14,741,000 barrels per hour, but final calculations based on the new map are expected to cut this figure to about 11,000,000 barrels per hour. It is probable that many wells around the edge of the field which have had allowables ranging from 21 to 23 barrels will be placed in the 20-barrel class, and that this reduction will be available for distribution among the better producers.

APPROVE SECURITY

Washington.—Approval of unemployment compensation laws enacted by California, Alabama, New Hampshire, Oregon, Wisconsin and the District of Columbia was announced by the Federal Social Security Board last week. The effect of the board's action is to give to oil companies in those jurisdictions and to other employers who are subject to the federal payroll tax under the unemployment insurance provisions of the Social Security Act the privilege of offsetting against the federal tax, up to 90 percent thereof, the amount of their contributions to the state unemployment compensation funds. Under the act, this privilege is granted only to employers in states whose local laws have been approved by the federal board. The board also has under consideration for approval the unemployment compensation laws of Massachusetts, New York, Washington and Utah.

TO STUDY RATIOS

Panhandle gas-oil ratio survey to be made

Monthly surveys of gas-oil ratios of wells in the Texas Panhandle were ordered by the Railroad Commission last week. These were to be taken over the next six months.

Excessive gas-oil ratios have been a problem in the Panhandle for many years, and since the passage of House Bill 266, commission orders have included a maximum ratio for wells in this district.

The new order provides for a max-

imum ratio of 10,000/1. Operators are to report to the commission their gas-oil ratios each month.

"The gas-oil ratio of each well in the Panhandle District shall be kept as low as possible and no well producing both oil and gas shall be permitted to produce gas per barrel of oil in excess of the amount of gas as fixed by order of the commission, unless specially authorized by an order of the commission to vary therefrom. However, any well which, by reason of its location, mode of completion, or necessity for total fluid lift, shall be allowed to produce daily a total volume of gas equivalent to that of the well producing with the highest oil allowable within the specified gas-oil ratio from the Panhandle Field proper, so long as the ratio of gas to oil does not exceed that set by statute.

"A gas-oil ratio determination shall be made on each well each month while the well is operating under normal conditions and reported to the Commission's deputy supervisor at Pampa, Texas. The above-mentioned printed form, 'Monthly Producer's Gas-Oil Ratio Determination Report', will be furnished each company or operator of oil wells in the Panhandle District of Texas and eaeh operator shall file this form in duplicate with the district supervisor of the Panhandle District at Pampa, Texas, beginning with the month of January, 1936, and continuing through the month of June, 1936, said form to accompany the 'State-wide Form EB Monthly Producers Report'."

FIX ORDER RELEASES

Austin.—The Texas Railroad Commission announced at its hearing last week that all railroad commission orders would be issued on Tuesday henceforth.

This includes every type of order which the commission issues, and means that the allowables fixed for February will be issued on January 21 or January 28.

Railroad commission employees, before whom many hearings are held, were specifically instructed not to advance any information as to their recommendations on applications before the commission, nor are interested parties to be permitted to see the orders before the official day set down for their release.

This is a radical change in commission precedure, but follows closely the plan used by the higher courts at Austin.

SHORT OIL LINE

Oklahoma City.—Empire Pipe Line Company has completed survey of right-of-way from its Coates Station in the South Oklahoma City pool to the "Mansion Area," a distance of four miles over which it will lay a six-inch oil line. This will give the "Mansion Area" its second outlet, the first having been laid by Sinclair Prairie Pipe Line Company as part of its Oklahoma City-Britton-Edmond system. This system is now being looped to take care of rapidly increasing allowable in the "Mansion Area." The first connections to be taken by Empire Pipe Line Company will be to wells of the British American Oil Producing Company. It should be completed January 26.

Exciting Week

BIG FITTS WILCOX WELL SHARES LIMELIGHT WITH OTHER AREAS

WEEKLY STAFF REPORT

Tulsa.—Completion of a Wilcox sand well which probably is capable of making 50,000 barrels per day in the Fitts pool of southeastern Pontotoc County, the addition of six new operations in the "Mansion Area" of the Oklahoma City pool along with the completion of large wells there, the Cushing play in western Creek County and the possibility of production in Alfalfa County in the northwestern part of the state, were features of the week in Oklahoma development.

New work throughout the state showed a pick up with 43 first reports from 20 scattered counties. Seminole County took the lead in new work with seven first reports; Pottawatomie County had five; Stephens and Oklahoma Counties, four each; Okfuskee and Osage Counties, three each; Pontotoc, Carter and Noble Counties, two each; and Jackson, Jefferson, Marshall, Cleveland, Lincoln, Payne, Beckham, Hughes, Creek, McIntosh and Tulsa Counties, one each.

Forty-nine oil wells rated initially at 120,863 barrels daily made the week one of the most important during the past 12 months in that respect. Four gas wells were rated at 8,500,000 cubic feet and 18 completions were dry holes. This was a total of 71 completions for the week with no abandoned locations or rigs included. Two wildcat oil wells entered the official completion list, one a three-barrel well and the other a six-barrel well both in Stephens County. Drilling footage reached a peak for the 12-month period with the completion of 229,130 feet of hole. Included was 29,403 feet in seven wildcat tests, 743 feet in four old wells and 198,986 feet in 60 completions in proven and semi-proven areas. Oklahoma County played the major role in initial production with 88,408 barrels from 13 wells. Ten of these were in the Oklahoma City pool, two in the Britton area and one in the Edmond pool.

50,000-BARREL WELL

Third Wilcox completion at Fitts enhances field

Ada, Okla.—The most important news of the week in the northern Mid-Continent area came from the Fitts pool of southeastern Pontotoc County, where E. H. Moore et al's Benton 6, SW NE NW 32-2n-7e, came in as the third producer in the Wilcox sand and flowed 1658 barrels in one hour through pressure control equipment and against some additional back pressure on the separators. Top of the sand was encountered at 4330 feet and the hole drilled to 4370 feet, still in highly saturated sand. Engineers estimated that the well might make as much as 2500 barrels per hour through the casing, since the 1658-barrel flow was through drill pipe, and during a period when the well had not completely cleaned itself. Three other wells have explored the Wilcox sand in the Fitts pool. The best initial yield, as indicated by flow through pressure control equipment, was approximately 1000 barrels per hour. Some geologists believe that the productive extent of the Wilcox sand at Fitts will eventually include about five sections or roughly 3200 acres. Operators have attempted to forestall its development at this time and E. H. Moore et al, discoverers of the zone, plugged the discovery well back to the overlying McLish formaiton after it had tested 809 barrels per hour through pressure control equipment.

According to a ruling issued within the past six months by the corporation commission all production from the Viola lime downward to and including the McLish may be recovered through the same oil string. In event it is desired to produce from the Wilcox sand a string of casing must be set at or near the top of that sand body. Already many of the leases have twin wells on 10-acre locations and development of the Wilcox sand will mean three wells to each 10-acre tract over a large part of the pool.

Jesse Pool Active

Three offsets to the discovery well in the new Jesse pool in southeastern Pontotoc County were active during the week. Continental Oil Company's

Simpson 1, SW SW NE 12-1n-7e, east offset to the discovery well, was drilling below 2704 feet; Continental Oil Company's James 1, NE NE SW 12-1n-7e, south offset to the discovery well, drilled to 588 feet, set 13⅜-inch surface casing and was waiting on cement to set; and The Texas Company's Simpson 1, NE NE SW 12-1n-7e, was drilling below 2670 feet.

Two and one-half miles northwest of the Fitts pool Gypsy Oil Company and Ramsey Petroleum Corporation were drilling below 5510 feet in green shale and dolomite in their Emry 1, SW SW NE 15-2n-6e.

WILDCAT IS HIGH

Viola lime is missed by western Oklahoma test

Enid, Okla.—Olson Drilling Company et al's Acre 1, C SW NE 14-24n-11w, 14 miles south of the town of Cherokee in southern Alfalfa County, was one of the most closely watched wildcat tests in the northern part of Oklahoma last week. After a number of bad fishing jobs and the loss of circulation several times it topped Mississippi lime at 6305 feet. Early this week it topped Sylvan shale at 6998 feet, having drilled 693 feet of Mississippi lime. The last few feet of a core between 7162 and 7172 feet showed Simpson dense lime, the Viola lime having been missed. Although only a small number of tests have been drilled in this part of the state and correlations must be made over long distances, it is believed that the test is running very high. Wilcox sand is expected within the next 40 feet.

From the standpoint of long drilling history it probably stands among the record holders in Oklahoma. The test was spudded in September, 1929, under the name Washoma Oil Company. In December of that year J. V. Bailey et al assumed operation with the depth at 4649 feet. Drilling was resumed on December 5, 1929, after a shut down of several months. In January, 1930, eight-inch casing was set at 4660 feet. Showings of oil and gas and a hole full of water were encountered in the Layton Series topped at 4955 feet. By June 30, 1933, it had reached a depth of only 5590 feet where it was again shut down. The next operator was Tex-O-Kan Development Company which carried the hole to 6460 feet. In 1935 Olson Drilling Company assisted by a group of major oil companies took over the operation.

Beaver Wildcat Resumes Drilling

Eighteen miles east of the town of Beaver in northeastern Beaver County, Anderson-Kerr et al had cleaned up a fishing job at 5765 feet and were drilling below 5880 feet in their Davis 1, C SW SE 36-5n-26 ecm. It is on a block assembled by William H. Atkinson of Oklahoma City. Carter Oil Company has a half interest in the test which is contracted to go to 6500 feet or 100 feet below top of the Mississippi lime. The structure is based on surface geology and seismology.

Activity Increasing

SOUTHERN AREA REGAINS POSITION OF 10 YEARS AGO

Ardmore.—The influx of oil men into the southern part of the state was making Ardmore look as it did more than 10 years ago when several prominent pools were under development and a large amount of exploratory work was under way. All major companies operating in northern Mid-Continent have established offices, many having had no direct representation in 10 years or more. Possibility of production a half-mile southeast of the old Hewitt extension in western Carter County, a new wildcat test south of Thackerville in southern Love County and the possibility that Carter Oil Company et al may soon know something as to the importance of their Simpson discovery in the old Fox pool of northwestern Carter County, were the high points of the week in southern Oklahoma.

Watch Carter County Test

The Texas Company and J. H. Hudson's Cathey 1, SE NE NE 6-5s-1w, one-half mile southeast of production in the Southeast Hewitt pool of western Carter County, was the most interesting of the group of important southern Oklahoma wildcats during the week. Late in the week 8⅝-inch casing was set at 4095 feet after coring well saturated sands at 4098 to 4118 feet and 4135 to 4157 feet, the total depth.

Carter Oil Company et al had given up hopes of removing the remaining 1000 feet of 4½-inch drill pipe and had cemented back to 6850 feet in Williams 1, SW NE SW 27-2s-3w, Simpson discovery well in the old Fox pool of northwestern Carter County. When the cement has set the hole will be redrilled and the old hole and remaining drill pipe sidetracked. Depth at the time the well showed for gusher production was 8088 feet. While drilling at that depth surface equipment broke down. Six hours later circulation was established but the drill pipe could not be pulled. After attempting to soak the string loose with oil introduced at high pressures was unsuccessful, 2000 gallons of acid was introduced. At the end of 48 hours the pipe was free and when it was pulled 30 feet off bottom the well blew out and flowed at a high rate for almost a week before it was killed with weighted mud. Late in October, 1935, operators started trying to reestablish circulation with oil, mud and cotton seed hulls. Although pressures as high as 3700 pounds per square inch were placed on the drill pipe and annular space no returns were obtained from bottom. It was then decided to back off a portion of the drill pipe, and to wash over and cut the pipe on the remainder of the string. This was successful until 7060 feet of drill pipe had been removed. At this point it was found that the wash strnig was going alongside the drill pipe instead of over it. A decision was then made to cement back and drill new hole. The only casing, besides the surface pipe, now in the hole is a string

OKLAHOMA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CADDO COUNTY—		
Wasteka Oil Co.'s Melton 2, se se se 26-6n-10w	*	2006
CLEVELAND COUNTY—		
Asa Lee Mays Inc's Fant 1, sw sw ne 27-10n-2w	*	7511
GARVIN COUNTY—		
Orbit Oil Co., Federal Bank Land 1-A, se sw sw 10-4n-3e	*	1830
HUGHES COUNTY—		
Rogers Bros, Oliphant 3, sw sw sw 1-9n-8e	8	1742
Manahan Oil Co. Oliphant "B" 4, ne ne se 11-9n-8e	314	1833
Sinclair Prairie, Kirley 2, se se ne 11-9n-8e	284	1786
JACKSON COUNTY—		
Gypsy Oil Co., Eley 2, se se se 10-1n-20w (pb 1550)	*	1758
Gypsy Oil Co., Kelly 3, nw ne ne 10-1n-20w (otd 1445)	89	1454
JEFFERSON COUNTY—		
Twin State Oil Co., Bassett 1, nw sw sw 16-5s-7w	*	3895
KAY COUNTY—		
Helmerich & Payne, Rath 1, sw sw sw 8-28n-2w	*	4780
LINCOLN COUNTY—		
Magnolia Pet. Co., Epps 1, se se se 32-15n-3e	63	5088
MARSHALL COUNTY—		
Leavell Coal Co., Brent 1, ne nw se 1-8s-5e	40	5452
Kingston Oil Co., Felts 2, sw ne nw 6-8s-6e	42	515
OKFUSKEE COUNTY—		
Sunray Oil Co., Cully 1, ne sw ne 13-12n-8e (pb 4005)	*	4194
Ralvery Oil Co., Johnston 3, csw ne 11-11n-8e	1200	3933
OKLAHOMA COUNTY—		
British-American, Piersol 1, se se se 22-12n-3w	27,569	6362
British-American, Piersol 3, ne se se 22-12n-3w	¶99-22,697	6390
Mary Green 1, sw sw sw 23-12n-3w	6345	6365
Fairfax Oil Corp., Bracht 1, se sw sw 23-12n-3w	4332	6514
Bracht 2, ne sw sw 23-12n-3w	7198	6500
Superior Oil Co., Sibley 2, nw sw sw 23-12n-3w	9869	6418
Phillips Pet. Co., Sheldon 1, nw sw ne 34-12n-3w	816	6565
Champin Ref. Co., Butler 1, ne sw nw 35-12n-3w	¶4-15	6371
Sutton 1, se nw nw 35-12n-3w	1446	6402
Phillips Pet. Co., Traders 5, cwl e½ sw 36-12n-3w	927	6379
Sinclair Prairie, Tinsley 1, se nw se 17-13n-3w	¶6-648	6647
Kratkey 1, se se ne 19-13n-3w (pb 6730)	155	6778
Continental Oil Co., Young 5, nw ne nw 31-14n-3w	¶348-6391	6707
OKMULGEE COUNTY—		
Steckoll, Hawkins 2-B, ne sw se 6-11n-12e	50	1238
Ford et al, McIntosh 2-A, ne sw se 10-13n-14e	*	2563
Claypool, Derisaw 1-A, cel nw se 14-14n-12e (pb 1642)	¶½	1996
English & Hendricks, Emma Adams 8, csl nw ne 12-14n-14e	5	1407
Lease Inv Co., Foster 1, ne ne ne 33-15n-11e	130	2854
Sheridan, Kimble & Heading 1, cnl ne ne 21-15n-12e	*	2221

of 9⅝-inch cemented at 4909 feet, six feet above top of the Hunton lime.

Gypsy Oil Company's Fitzgerald 3, SE NW SE 28-2s-3w, approximately one-half mile west of the Williams 1, was drilling below 1400 feet. Phillips Petroleum Company's Tucker 5, SE NE NW 29-2s-3w, was shut down awaiting orders at 3809 feet. It is understood this test was started primarily to explore only the shallower sands. Several small showings of oil were encountered but electric logging indicated them to be of minor consideration. The operation probably will remain shut down until Carter Oil Company et al have finished redrilling their Williams 1. Should this test turn out as expected, Phillips probably will carry Tucker 5 to the deep horizon.

Company, Well and Location	Init. Prod. Bbls.	Depth
Peterson, McKinney 2, se sw nw 16-15n-14e	*	879
Lincoln, Roberts 17, nw se sw 29-15n-14e	15	1794
OSAGE COUNTY—		
Murry Ringold, Turkey Island 8, ce½ ne se ne 25-21n-8e	20	1150
Opal Twyman 3, cw½ sw 4-23n-11e	¶3¼	1636
Sinclair Prairie 8, ne sw nw 15-24n-7e	23	2607
Champlin O&R Co., Claremore 3, se sw ne 17-24n-7e	92	2619
Lewis Prod. Co., Thompson 1, ne ne se 20-24n-7e	*	2703
Sinclair Prairie, Tract 236 1, ne ne sw 9-25n-6e	170	2693
Sinclair Prairie 6, se sw se 9-25n-6e	¶5-5786	2781
Gypsy Oil Co., Revard 1, nw sw se 26-26n-6e (pb 2848)	56	2881
PONTOTOC COUNTY—		
Burke Greis, Chambers 5, nw nw nw 36-2n-6e	3583	4401
Clark & Cowden, Summers 3, nw ne sw 17-2n-7e	45	1730
Magnolia Pet. Co., Statler 1, nw se sw 28-2n-7e	¶2-2202	4302
Simpson 6, nw se ne 29-2n-7e	879	3641
Moore, Schauers 13, nw nw nw 29-2n-7e	2406	3818
Carter Oil, Hardin 8, se se sw 30-2n-7e (otd 4092)	2456	4340
Richards 10, sw sw se 30-2n-7e (otd 4085)	2349	4325
Richards 16, ne sw se 30-2n-7e (otd 4142)	2797	4388
Moore et al, Benton 2, ne ne nw 32-2n-7e	5664	4400
Boyle, Crest 1, sw se sw 30-5n-4e	*	2009
Senore Oil Co., Wheeler 1, se ne nw 27-5n-8e	*	860
POTTAWATOMIE COUNTY—		
Phillips Pet. Co., Booze 3, se ne se 9-7n-4e (pb 3628)	18	3995
Smith & Scott, Brandenburg 1, se se sw 34-8n-4e	643	4126
SEMINOLE COUNTY—		
Texas Co., Mayhue 8, se nw nw 14-9n-6e	50	3935
Roadhouse, Green 1, nw se se 2-5n-7e (pb 1024)	¶4¼	1043
Burke Greis, Jackson 3, nw sw sw 29-7n-8e	100	4161
Magnolia Pet. Co., Reed 4, ne ne nw 34-8n-8e	688	4202
Darby Pet. Co., Harjo 4, sw se sw 25-9n-6e (pb 4048)	243	4053
Wood Oil Co., Lincoln 1, nw ne ne 33-9n-6e	*	4404
STEPHENS COUNTY—		
Summings, Aldridge 1-A, nw ne se 15-1s-4w	¶1½-3	415
Carter & Ring, Arm 8, nw nw ne 26-1s-5w	6	651
Raizen Bros., Broadbent 1-A, sw se nw 1-2s-5w	*	431
Westheimer & Daube, Haws 2, ne sw se se 4-2s-5w	¶¼	670
Shirley Clumm, Gilmore "B" 2, ne nw se 10-2s-5w	*	844
McAlister et al, White 2, se se nw 11-2s-8w	*	1530
TULSA COUNTY—		
Commings, Buck 2-A, cnl nw sw 27-17n-13e (pb 2044)	8	2100
WAGONER COUNTY—		
Mechlin et al, Drew 2-A, cwl sw nw 30-18n-15e	*	1925

*Failures; †Junked; ¶Million cu. ft. gas.

New Love County Wildcat

J. Ben Russell and Winkler-McQueen have started work on Scott 1, SW SE SW 29-8s-2e, a wildcat test near the town of Thackerville in southern Love County. The test is located on a 3500-acre block, the geology of which was worked by Don Allen. Contract depth is 3500 feet but heavy equipment is to be used and the test may go deeper. The Deese member of the Pennsylvanian Series is expected above 3500 feet and Ellenberger lime at approximately 4500 feet. Magnolia Petroleum Company, Gypsy Oil Company and Mid-Continent Petroleum Corporation own acreage in the block. The first well is being drilled on a deal through which Winkler-McQueen obtained a half-interest in the 60-acre Scott lease and scattered acreage over the block, which lies in sections 19, 20, 21, 28, 29, 30, 31, 32 and 33-8s-2e and sections 4, 5 and 6-9s-2e.

Five miles northeast of the town of Marietta in northwestern Love County Amerada Petroleum Corporation and Stanolind Oil and Gas Company were drilling below 4524 feet in shale, lime shells and thin streaks of dolomite in Westheimer 2, SW SE SW 27-6s-2e. This test, which has been one of the most closely watched in southern Oklahoma, has had a great thickness of upper Simpson, through which has been found a large number of saturated streaks of dolomite. In most instances, however, the dolomite has been of very low porosity. Sixteen miles northwest of Marietta in western Love County, Sinclair Prairie Oil Company was waiting for cement to set after plugging back from 5700 to 5424 feet in Stockton 1, SE SE SW 26-6s-2w. This important test was drilled to 7165 feet where drill pipe was stuck in the hole. Approximately 5700 feet of pipe was backed off and cut out. It is now the intention of the operator to drill around the pipe remaining in the hole.

AAPG MAKE PLANS

Tulsa.—Committees on arrangements for the twenty-first annual meeting of the American Association of Petroleum Geologists to be held here on Thursday, Friday and Saturday, March 19 to 21, were announced during the week by Frank R. Clark, chairman of the general committee. Serving with Clark on the general committee will be Ira H. Cram, vice chairman in charge of the technical program; and W. B. Wilson, vice chairman in charge of arrangements. Following is a list of the other committees and the members of each: Technical Sessions, J. L. Borden, chairman, and T. C. Newman, Ed Cahill, Charles Ryniker and Gerald H. Westby, members; Registration, Stanley B. White, chairman, and Dollie Radley Hall, L. H. Lukert, J. S. Redfield and J. D. McClure, members; Entertainment, L. D. Simmons, chairman, and Chas. G. Carlson, Wm. E. Horkey, Clark Millison, George V. Dunn, H. F. Sackett, W. E. Barnard and G. C. Siverson, members; Trips, N. W. Bass, chairman, and R. C. Coffin, John Fitts, Howard Clark, Dr. Charles E. Decker and C. W. Tomlinson, members; Golf, R. J. Cullen, chairman, and Roscor Shutt and Lewis Mosburg, members; Publicity, Richard T. Lyons, chairman, and L. G. E. Bignell, Floyd Swindell, J. B. Leiser and M. H. Brown, members; and Reception, R. B. Rutledge, chairman, and G. S. Lambert, Lucian Walker, L. Murray Neumann, F. A. Bush, A. L. Beekley and Dr. Ed Bloesch, members.

ENLARGE OIL LINE

Tulsa.—Stanolind Pipe Line Company has completed 24 miles of eight-inch loop from its Byng Station north of Ada, northwestward to the Maud area in eastern Pottawatomie County and northeastward into western Seminole County. Capacity of the stations at Maud and Fitts are being increased, the latter being almost doubled.

HARTFORD TO SPEAK

Tulsa engineers to hear A.S.M.E. officials

Tulsa.—Engineers of Tulsa and vicinity will hear Ernest Hartford, guest speaker of the Engineers' Club of Tulsa on Friday evening, January 24. Mr. Hartford comes from New York City and is assistant secretary of the American Society of Mechanical Engineers. He is not a stranger to Tulsa, having helped found the local chapter of that organization and subsequently being active in the development of the society's interests in various engineering problems of the petroleum industry.

Mr. Hartford's talk will be of interest to all engineers. He will speak of the engineering profession's urgent need of coordination of its various interests. He will also tell how the lack of a common meeting ground and association is not only costly to the individual engineer but to industry and the community.

This talk will be particularly timely as this gathering will be the first of a series of combined meetings of the Engineers' Club of Tulsa and the local chapter of the various engineering societies. All engineers are cordially invited to hear Mr. Hartford Friday evening, January 24, in sections A, B, and C in the Tulsa Building.

FAVOR DALLAS

Scouts seek attendance from Mid-Continent

San Antonio.—Dallas is favored for the annual meeting of the National Oil Scouts Association to be held during the early spring. While no definite meeting place has been selected, this place is considered likely due to the fact that an unusually large number of scouts are expected to come from Oklahoma, Kansas and Arkansas, as well as from Texas and Louisiana.

An executive meeting was held in

San Antonio recently at which time plans were outlined for the publication of the association's year book. It has been materially increased in size and in quantity of information to include field data on the majority of the Mid-Continent area. Information is being assembled and will be in the hands of the editors before February 15.

The meeting was conducted by Jesse L. Bullard, Shell Petroleum Corporation, San Antonio, president of the national association; Dwight L. Becker, Amerada Petroleum Corporation, Houston, chairman of the executive committee; Howard Boyd, Magnolia Petroleum Company, Dallas, secretary and treasurer.

PLAN A.P.I. MEET

Mid-Continent section is to meet at Wichita

Wichita.—The regular spring meeting of the Mid-Continent District, Division of Production, American Petroleum Institute, will be held here at the Allis Hotel on Thursday and Friday, February 20 and 21. The following is a tentative list of subjects under consideration for the program:

"Salt Water Disposal."

"Water Flooding in Mid-Continent Area" (dealing with recent water flooding in Oklahoma fields and its possible application to Kansas lenticular fields).

"Gas Repressuring in Eastern Kansas."

"Methods of Calculating Required Horsepower for Pumping Wells."

"Power Equipment for Rotary Drilling, Engine and Engine-Electric."

"Electric Coring and Its Value in Mid-Continent Drilling Operations."

"Drilling and Production Practices in the Oklahoma City Field."

"Symposium on Corrosion of Lease Equipment in Sour Oil Producing Areas."

"Effect of Reservoir Performance on Future Oil Recovery."

"Trend of Surface Pumping Equipment in Mid-Continent Fields."

Acting as the program committee will be G. A. Holloway, chairman, Lee C. Moore Company, Wichita; T. J. Hamilton, Phillips Petroleum Company, Great Bend, Kansas; J. T. Hayward, Barnsdall Oil Company, Tulsa; L. W. McLeod, Westinghouse Electric & Manufacturing Company; A. S. Ritchie, McPherson Drilling Company, Wichita; and D. L. Trax, Gypsy Oil Company, Tulsa. A complete announcement of the meeting, together with a list of all speakers and subjects, will be forwarded to members at an early date.

CALIFORNIA GAS LINE

Los Angeles.—Standard Oil Company of California is building a six-inch pipe line to be used for conveying gas from the Mountain View field, Kern County, to Standard's processing plant in the Kern River field, about 10 miles to the northwest.

New Fields Found

KANSAS' MOST NORTHERN WELL LEADS OTHER STRIKES OF WEEK

WEEKLY STAFF REPORT

Wichita.—The past week was one of considerable activity in widely scattered areas in Kansas. Discovery of oil in northern Rooks County within 25 miles of the Kansas-Nebraska line moved the oil play to the most northerly point it has reached in the state other than in the drilling of several dry holes. The Oxford pool of eastern Sumner County continued to be the outstanding leader in the state so far as large initial production is concerned. Rice County, an area which has been under intensive development for several years, had good prospects for a new pool. Probable extension of several of the newer pools and the building up of larger gas reserves in the Sperling area of Harvey County were other high lights of the week.

New work showed a material increase with 29 first reports from 11 counties. Russell County was in the lead with seven new operations; Greenwood County had five; Barton, Reno and Sedgwick, three each; Coffey and Rice Counties, two each; and Ellis, Chase, Harvey and McPherson Counties, one each. The 18 completed oil wells were rated at 23,717 barrels initially, two gas wells had combined gauge of 52,000,000 cubic feet and 12 tests were dry holes, a total of 32 completions during the week. Two oil wells and one gas well were among the exploratory completions along with five dry holes. A total of 88,313 feet of drilling was completed, including 25,790 feet in the eight wildcat completions, 1100 feet in two old wells and 61,413 feet in proven and semi-proven areas.

New Pool for Rooks County

F. A. Gillespie & Sons et al's Lowe 1, NE NE NW 12-6s-18w, seven miles north of the town of Stockton in northern Rooks County, were fishing for tools with a showing estimated at 10 barrels per day from Lansing lime at 3036 to 3136 feet. Casing had been set on top of the lime when tools were lost. This test, if it should make a commercial producer, would bring into existence the northernmost production of either oil or gas in the state. The nearest established production is more than 16 miles to the south in the Dopita pool, also in Rooks County. Lowe 1 is being drilled on structural conditions revealed through core drilling. The well is but 25 miles from the Nebraska line.

New Rice County Pool

Skiles et al's Edwards 1, NW NW NE 3-18s-8w, two and one-half miles east of the town of Geneseo and five miles northeast of production in the Geneseo pool, appears to have given northern Rice County another new producing area. Top of the Arbuckle siliceous lime was encountered at 3275 feet. At 3281 feet operators had 100 feet of high gravity oil in the hole and were expected to drill a few feet deeper before testing.

In the Bushton area of northwestern Rice County George Hinkle, Fred Jones and W. F. Swain were fishing for an underdigger lost at 2635 feet in their Schoenig 1, NE NE SE 21-18s-10w. It is a wildcat approximately one mile north of the Orth pool.

David Pool Extended

In the new David pool of northwestern Cowley County Derby Oil Company's David 1, SW SW NE 2-31s-4e, filled up 1600 feet with oil in 10 hours from Bartlesville sand drilled to 2984 feet. It is a northeast diagonal offset to the discovery well which was completed by Earl Wakefield in the latter part of 1935.

Two wells were completed during the week in the Oxford pool of eastern Sumner County. Tom Deal's Long Bell Lumber 1, just north of Main Street in Oxford Townsite, yielded 293 barrels on its potential gauge. Total depth is 3083 feet in Simpson. To the southwest of the townsite Shell Petroleum Corporation's Scroggins 4-A, SE SE NW 14-32s-2e, was given a potential of 11,042 barrels from 2897 feet in Simpson. It was acidized before the official gauge was taken.

Acid Helps Reno Well

Shell Petroleum Corporation's Lee 1, C EL SE 10-26s-9w, southeast of Langdon in Reno County, produced 4641 barrels in 19 hours to indicate an initial 24-hour rating of 5604 barrels from Viola lime topped at 4150 feet and penetrated eight feet. This well was completed late in 1935 for an initial

yield of 3604 barrels and the recent acid treatment apparently has boosted its capacity more than 50 percent.

In the Burrton pool of northeastern Reno County, Sinclair Prairie Oil Company was drilling ahead below 3330 feet in Mississippi chat in Matlock 2, NE NE SW 3-24s-4w, southwesternmost test in the pool. Approximately 18,000,000 cubic feet of dry gas had been passed up. It is an east offset to the same operator's Matlock 1 which was completed as a Hunton lime producer.

Shell Petroleum Corporation had staked location for Brown 1, C SE NW 10-24s-4w, between the Burrton and Stone pools. Discovery of production at this location might result in the eventual proof that these two pools are on the same structure. It had resumed drilling after setting 306 feet of 12½-inch surface pipe.

Fifteen miles southeast of Lyons in southeastern Rice County Tabor-Coleman and Atlantic Oil Producing Company's Tharp 1, C NW NW 33-21s-6w, cemented back from 3235 to 3000 feet after an unsuccessful fishing job at the former depth.

Olson Drilling Company's Krantz 1, NE NE SE 13-25s-5w, southwest of the town of Haven in southeastern Reno County, was coring below 4105 feet and expecting Arbuckle siliceous lime.

Sperling Pool Active

The Sperling pool, south of the town of Moundridge in northwestern Harvey County, bids fair to become a gas area of considerable importance on the basis of recently completed tests. Imo Oil & Gas Company, discoverers of the pool, topped Mississippi chat at 2945 feet, drilled to 2975 feet and had run tubing to test, after unloading the hole, in Sperling 2, NE NE NE 23-22s-2w, in the heart of the pool. It is a north offset to the discovery well which was completed early in 1935 flowing 1634 barrels in 24 hours from Hunton lime, topped at 3279 feet and drilled to 3339 feet. Subsequent attempts to extend the Hunton lime production have resulted in some failures but in some recent cases gas has been found in the chat above the lower unproductive formations. The same operators have made location and completed derrick for Ewey 2, NW NW NW 24-22s-2w. Drilling of this test will be withheld until Sperling 2 is completed at which time the tools will be moved to the new location.

Sunray Oil Company's Sperling 1 had water in the Wilcox sand, was plugged back to 2960 feet and gauged 8,000,000 cubic feet from the chat. The same operator's Dirks 1, C SE SW 14-22s-2w, was a new operation with material on the ground.

Sunray Oil Company's Hege 1, SW NW SW 13-22s-2w, was reported flowing at the rate of 9,450,000 cubic feet, having settled down from the initial of 21,000,000 cubic feet. No oil or water was showing with the gas. The fact that Cities Service is a purchaser in the area may encourage a considerable amount of Mississippi chat activity in the pol.

Magnolia Petroleum Company was still trying to free 5 3/16-inch casing in its Schmidt 5, SE NW NE 30-22s-3w, in the southern part of the Hollow pool of northwestern Harvey County. Top of the Arbuckle siliceous lime was topped at 3611 feet. If the string is freed the hole will be underreamed to set casing at that point before drilling in.

H. E. Witt et al's Murray 1, NW NW SW 14-17s-14w, a wildcat test in northwestern Barton County, topped Arbuckle siliceous lime at 3452 feet, had a showing of gas at 3460 feet and started making water at 3477 feet, the total depth. It is on a trend, supposedly being drilled without the aid of geology or geophysics.

Herndon Bros., and Atlantic Oil Producing Company's Russell 1, C SE NW 20-21s-14w, west of the Gates pool in northwestern Stafford County, topped Viola lime at 3677 feet and were drilling below 3700 feet with no showings reported. It is located on a seismograph "high."

KANSAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BARTON COUNTY—		
Torrey & Feaster, Feist 1, ne ne se 29-18s-11w	576	3433
Lario et al, Smith 1, sw nw nw 26-18s-13w	*	3364
Rehma 1, ne ne sw 15-19s-11w	*	3397
C. B. Davis, Steckel 2, ne nw se 1-20s-11w	*	3321
Gypsy Oil Co., Steckel 3, sw se ne 1-20s-11w	915	3290
BUTLER COUNTY—		
Sooby & Keene, Rutherford 1, se se se 7-29s-4e (pb 1835)	40	1865
COWLEY COUNTY—		
Patton et al, Higgenbottom 2, sw sw sw 29-31s-6e (pb 2962)	20	2965
Lewis Prod. Co., Pierce "A" 4, sw se se 30-31s-6e	60	2947
Landon, Drury 1, nw nw nw 32-31s-6e	60	2297
Carey et al, Short 1, ne ne nw 6-32s-4e	*	3115
Gralopp et al, Cook 1, se sw se 13-32s-4e	200	2355
Fred Moore et al, Countryman 1, ne ne nw 4-33s-7e	*	2030
Shawver & Wilt, Baruth 1, sw ne ne 8-34s-3e	¶5	1893
ELLSWORTH COUNTY—		
Empire, Dolechek 1, sw sw sw 7-16s-7w	*	2957
Phillips Pet. Co., Melchert 5, se sw ne 23-17s-9w	1417	3206
GREENWOOD COUNTY—		
Oko Oil Co., Shambaugh 5, sw nw se 22-23s-13e (pb 1719)	15	1730
McIntyre & Sherman, Agard 1, sw se ne 23-24s-9e	80	2220
Bert Young, Myers 3, se se se 10-24s-12e	10	1778
KINGMAN COUNTY—		
Lauck et al, Skilling 1, se se sw 33-27s-8w	*	4496
RICE COUNTY—		
Empire, Gouldner 2, se se sw 9-18s-9w	*	3260
Phillips' I.T.I.O., Krampe 9, sw ne se 31-19s-10w	2125	3292
Wentz, Bushong 1, sw sw sw 30-21s-10w	*	3530
RUSH COUNTY—		
Marathon Oil Co., Mauler 1, csw ¼ 12-18s-16w	¶47	3540
RUSSELL COUNTY—		
Palmer, Killion 7, se sw ne 28-13s-14w	*	3291
Hartman & Blair, Boxberger 1, ne ne ne 26-14s-14w	414	3012
Shaffer, Polcyn 1, ne ne ne 10-14s-15w	851	3275
Signal Oil Co., Berry 1, se se ne 33-15s-13w	391	3336
Skelly, Figgins 1, nw nw sw 34-15s-13w	245	3339
SEDGWICK COUNTY—		
Dickey Oil Co., Heath 2, sw ne nw 20-20s-1e	*	3150
SUMNER COUNTY—		
Amerada & Sunray, Gassaway 2, se se sw 14-32s-2e (otd 2104)	16,208	2868
Amerada & Sunray, Gassaway 8, cwl se sw 14-32s-2e (otd 2101)	90	2437
WOODSON COUNTY—		
Saco Oil Co., Bradley 1, sw sw nw 20-25s-14e	*	1529

*Failures; †Junked; ¶Million cu. ft. gas.

ELECT OFFICERS

A. S. Ritchie is new head of Kansas A.P.I. chapter

WICHITA.

THE first 1936 meeting of the Kansas Chapter of the American Petroleum Institute, Production Division, was held at Great Bend, January 10. The election of officers for the 1936 term was held at this meeting, and the following members elected:

A. S. Ritchie, McPherson Drilling Company, chairman; Van D. Bennett, Derby Oil Company, first vice chairman; G. A. Holloway, Lee C. Moore & Company, second vice chairman; and H. K. Phillips, White Eagle Oil Company; H. M. Williams, Marathon Oil Company; T. J. Hamilton, Phillips Petroleum Company; E. B. Pyle, independent producer; E. B. Schawver, independent producer; L. W. McLeod, Westinghouse Electric Company; Dewey Jordan, Atlantic Oil Company, advistory board.

M. G. Ensinger, Union Wire Rope Company, gave an interesting talk on "The Uses and Abuses of Wire Rope". Slides were presented to show all phases of wire rope manufacture. A discussion on wire rope practices in Kansas fields followed the talk.

Entertainment for the evening was provided by the Great Bend Chamber of Commerce, which furnished a free lunch. A special invitation was issued to all members to attend the meeting of the Mid-Continent Section to be held at Wichita, February 20 and 21.

TEXAS PERMITS UP

Austin.—The Texas Railroad Commission last week approved permits for the drilling of 220 new wells in Texas, 16 more than were allowed the week before.

North Texas reported the most new wells with 72, including 28 in Archer and 19 in Young County. In West Central Texas there were 10 new permits, and East Central Texas reported 13 with 10 in Cook County.

Southwest Texas listed 39 new permits with 18 in Duval County, and there were 31 in the adjacent Gulf Coast district.

There was a marked increase in Panhandle permits with 33 new locations. West Texas listed 13 permits.

East Texas showed a very marked decline with only nine locations for new wells granted.

L. C. ROBERTS has been promoted to Division Geologist of the Gulf Coastal division for Stanolind Oil & Gas Company. R. A. (Russ) Weingartner is now district geologist for the Texas Gulf Coast. These changes were effective January 1, 1936.

Panhandle Show

CORE REVIVES HOPES FOR DEEP OIL PRODUCTION

WEEKLY STAFF REPORT

Pampa, Texas.—Recovery of oil stained cores near the 6300-foot level by Phillips Petroleum Company's Hall County wildcat on the L. M. Hughes land, near C NE Section 4, Block H, J. H. Stephens Survey, revives prospects for deep production in the southeast portion of the Texas Panhandle. A string of 9⅝-inch pipe has been cemented at 6305 feet to make a production test of the formation, which is believed to be near the base of the Pennsylvanian limestone.

This Hall County test is near the center of approximately 25,000 acres held under lease by Phillips Petroleum Company, and is about 6½ miles west of a 5232-foot failure drilled in 1929 by Rio Bravo Oil Company on the W. E. Hughes land. Phillips Petroleum Company contracted to drill to 6000 feet in return for lease on 15,352 acres contributed by the Hughes Estate, Denver, and the latter retained mineral rights under 160 acres out of each section of the ranch property. Trace of gas was recorded in sandy-shale at 4955-4960 feet and a show of oil was also reported at 5421-5422 feet, with an elevation of 2225 feet, but no test was made of either horizon for production. The casing program was planned for a deep test, as 20-inch pipe was cemented at 513 feet after running 26-inch conductor to 46 feet, and 13⅜-inch pipe was cemented at 2778 feet.

Interest in the southeast portion of the Panhandle assumed large proportions last summer when Alma Oil Company's Mollie Low 1, located in southeastern Childress County and about 35 miles southeast of the above prospect, developed high gravity oil with water from Canyon limestone at 5633-5653 feet. The hole was deepened to the Ordovician lime zone at 8223 feet, with negative results, then plugged back to 5869 feet and pumped for several weeks, averaging 500 barrels fluid daily, including three percent oil. The test was abandoned early in December.

Shamrock Oil & Gas Company's A. F. Robertson-Gulf 1-D, which recently extended oil production three quarters-of-one-mile to the north in the Sunray field, Moore County, has been given a potential rating of 43 barrels of 40 gravity oil daily from dolomite lime at 3360-3365 feet. The hole was drilled to 3381 feet, or 144 feet above sea level. The gas production is estimated at 10,000,000 cubic feet daily.

Another failure was added to the north extension of the Osborne field, Wheeler County, when Wallee Oil Company's C. A. Morgan 1, SEc SW NW Section 89, Block 13, H&GN Ry. Survey, failed to log oil or gas production in commerical quantities in drilling to 2195 feet, or 41 feet below sea level.

Contract has been made by Heydrick et al, Wichita Falls group, for the drilling of a 4000-foot test in Oldham County on a 15,000-acre block obtained from the Matador Cattle & Land Company. Location will be made near the northeast corner of League 280, Capital Syndicate Survey.

TEXAS PANHANDLE Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CARSON COUNTY—		
Phillips, E. Cooper 4	536	3016
GRAY COUNTY—		
Empire, A. C. Shields 7	706	3220
Gulf, R. B. Thompson 12	497	3280
W. B. Saulsbury Oil Co., N. Carpenter 1	30	2925
G. D. Haden 1	¶11	3268
C. M. McKnight 1	¶6	3254
HUTCHINSON COUNTY—		
R. A. Burnett et al, Ida Ingerton 1	¶12	2710
Joe Murphy et al, E. E. Watkins 1-B	30	2786
H. J. Wasson et al, W. B. Haile 1	604	3093
MOORE COUNTY—		
Texoma Nat'l Gas Co., R. S. Coon 6-M	¶9	3310
ROBERTS COUNTY—		
Seiber & Whitlock, J. Cunningham 1	*	3175
WHEELER COUNTY—		
DuMar O&G Co., J. W. Stauffer 2	¶1.7	1660
Gray County Prod. Corp., F. L. Major 1	¶47	2575
Helena O&G Co., P. M. Keller 23	1101	2537
Mert Oil Co., G. W. Sitter 2-B	¶17	2600
Palmer et al, G. W. Haynes 1	¶33½	1780
Smith Bros. Ref. Co.-Hanlon & Buchanan, Harlan 10	525	2565
W. R. White-Wallee Oil Co., C. A. Morgan 1	*	2195

*Failures; †Junked; ¶Million cu. ft. gas.

WANT INCREASE
North Cowden operators for greater allowable

Austin.—North Cowden operators appeared before the Texas Railroad Commission last week seeking an increase of 1000 barrels a day in the allowable and a revision in the method of allocation in the field.

Use of a formation packer to reduce the gas/oil ratio has been found advisable, but the installation of these packers was abandoned last year when the railroad commission announced that open flow potential tests would be taken on West Texas wells.

The plan advanced at the hearing provided for the substitution of bottom hole pressure tests as a basis for determining potential decline.

The new plan would present the following formula:

"Individual potentials of each well shall be adjusted by multiplying the old potential by the fraction, new field average pressure (a) over old field average pressure (b) times the fraction, individual well pressure (c) over new field average pressure (a), 50 percent of the value of B being deducted from each of the factors A, B and C."

Operators in the North Cowden area unanimously approve the suggested program.

GAINES TEST DELAYED
Junk may necessitate drilling new hole

San Angelo, Texas.—Accumulation of more junk in the Gaines County wildcat test of W. T. Walsh, Harry Adams et al on the S. J. Averitt 40-acre lease, NEc Section 228, Block G, W. T. Ry. Survey, with the hole bottomed at 3142 feet, will likely necessitate the drilling of a new hole to explore the dolomite lime zone underlying the Seminole structure. The area holds top rank among the prospects awaiting exploratory tests in the Permian Basin. Averitt 1 has partially confirmed the geophysical high by registering a high structural position and developing high

WEST TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ANDREWS COUNTY (Fuhrman Field)—		
Fuhrman Pet. Corp., W. T. Ford 2	¶12	4478
CRANE COUNTY (Waddell Field)—		
E. M. Wahlenmaier et al, TP Land Trust 2	*	3690
FISHER COUNTY—		
Tide Water-Merry Bros. & Perini, Inc., M. Howard 2	362	3666
HOWARD COUNTY—		
California Co., D. M. Dodge 5	212	2842
Ward Oil Corp., Roberts 5-A	500	2971
JONES COUNTY—		
Thos. D. Humphrey et al, H. Dorsey 1	2500	2061
Tom B. Medders et al, J. E. Manley 1	*	1705
Moutray Oil Co., F. Olney 1	*	2255
Reliance Oil & Roy. Co.-Jones & Stasney, Ida Crow 1	*	2147
PECOS COUNTY (Yates Field)—		
A. R. Eppenauer et al, State-Compton-Bland 1 (4.36-ac)	†	1336
Marathon, I. G. Yates 29-B	59,496	1450
Shell, M. A. Smith 2-C	1080	1369
PECOS COUNTY (Pecos Valley Field)—		
Alex Fields & H. Watson, Eaton-Stanolind 3	50	1645
REEVES COUNTY—		
Grisham-Hunter Corp., TP Land Trust 1	*	3350
UPTON COUNTY—		
Gulf, J. T. McElroy 123	80	3035
J. T. McElroy 125	366	2920
Thea-Botal Oil Co. (Clark & Cooper) Lane 4	400	2263
WARD COUNTY—		
Fred Leidecker & G. Vaughn, Archenhold 4	615	3043
Rio Bravo Oil Co., D. Olcott 1	1013	2537
Atlantic O. P. Co., J. Miller 4-A	135	2588
WINKLER COUNTY (Kermit Field)—		
Atlantic O. P. Co., J. C. Lovett 1	¶15	3250
WINKLER COUNTY (Sayre Field)—		
Magnolia, J. B. Walton 16	500	2926
Sayre Oil Co., J. F. Howe 3-A	1683	2971
Sinclair Prairie, H. E. Cummins 7	625	2983
TP Coal & Oil Co., Daugherty 7	590	2995
Daugherty 8	1082	2945
Westbrook Oil Corp., Daugherty 5	640	2995

*Failures; †Junked; ¶Million cu. ft. gas.

pressure gas production at intervals below 2785 feet. It is contracted to drill to 5000 feet, or below the projected oil producing zone. Rotary rig was replaced by cable tools after drilling to 3090 feet, with 8⅝-inch pipe cemented at 2812 feet.

In the northwestern portion of Gaines County, E. M. Wahlenmaier, York & Harper, Inc.'s E. H. Jones-Humble 1, C SW SW Section 414, Block G, has drilled to 4700 feet. It occupies a low structural position, according to reports.

Sun Oil Company is moving in materials to drill an intermediate wildcat on a line between the Keystone and Scarborough fields, Winkler County. Location is on the Keystone Cattle Company et al tract, SEc Section 3, Block 77, P.S.L. Survey. The company holds short-term leases on sections adjoining to the east and west.

The Sayre field, which is advancing into first position on production in Winkler County, added five flowing wells the past week, including two for Texas Pacific Coal & Oil Company, and one each for Magnolia Petroleum Company, Sinclair Prairie Oil Company and Sayre Oil Company. The latter's Howe 3-A gauged 1683 barrels of oil after 160-quart nitro shot in sandy-lime zone at 2806-2971 feet. The former's Lum Daugherty 8, NEc SE NE Section 2, northern most producer, was rated at 1082 barrels initial, with sufficient gas to afford a steady flow, after successfully plugging off bottom-hole water at 2942-2945 feet. The hole was plugged back to 2937 feet and shot with 360 quarts of nitro at 2770-2921 feet. Magnolia Petroleum Company's Walton 17 is rigging up on an east offset location.

Gas yield rated at 15,000,000 cubic feet daily was developed by Atlantic Oil Producing Company's J. C. Lovett 1, NEc SW Section 36, Block 26, P.S.L. Survey, Kermit area, after plugging back from 3250 feet to 2900 feet. No oil was encountered in drilling below the oil level of the Kermit area.

In southern Winkler County, Superior Oil & Gas Company, Tulsa, has made location for W. J. Hill 1, SEc 80-acre lease, Section 18, Block B-11, P.S.L. Survey, near semi-wildcat oil producer completed last year by Sid Richardson et al on the Hill tract.

Second oil completion scored by Tide Water Oil Company and Merry Brothers & Perini, Inc., on their M. Howard discovery lease in northwestern Fisher County pumped 362 barrels initial after using acid in lime at 3645-3666 feet. Location is near NEc SW NE Section 180, Block 2, H&TC Ry. survey, and short distance southwest of the original producer, which has made considerable water with oil on pump since last March.

NORTH TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARCHER COUNTY—		
Brown Farm Oil Co., Parrish Bros. 4, sec 106	*	1517
L. T. Burns et al, V. Seay 2, blk 56 Turbeville 10-E, sec 124	* 10	1154 1336
L. F. Wilson 2-AA, sec 114	*	1452
Cable Oil Co., Webb 5, blk 5	20	689
Holcomb & Jones, Taylor-Bean 1, sec 17	4	657
Kriss & Buzzard, Britton 2, blk 20	5	540
Nelson & Tucker, Ford 2	15	999
Perkins-Cullum Oil Co., Richardson 4-B, blk 14	29	1387
Pet. Producers Co., Richardson 12-D, sec 1	*	1308
United Producers Co., J. J. Brockhauser 1, lot 88	*	1070
White & Duncan, Webb 2, sec 27	*	745
BAYLOR COUNTY—		
S. P. Morris & Les Spoonts, C. T. Porter 1	†	1633
W. B. Omohundro et al, Portwood 1	*	1560
Geo. B. Ray & Staniforth, Portland 40-C, sec 1574	400	1373
COOKE COUNTY—		
Deskin & Bryan, F. M. Daugherty 1	*	808
T. P. Frost et al, J. Dangelmayer 1, blk 20	*	1801
Horwitz & Oldom, J. A. Dennis 17	10	1235
Oil Fields Material Co., Trueben-back 1, blk 6	†	896
E. A. Regal et al, C. Hermes 1	*	1751
DENTON COUNTY—		
Waggoner et al, C. N. Skaggs 1	*	1849
JACK COUNTY—		
N. D. Crenshaw et al, S. J. Beasley 1	780	3004
MONTAGUE COUNTY—		
Barnsdall Oil Co., Cunningham 7	38	938
Ross Drl. Co., J. W. Roland 1	40	873
Welch et al, A. J. Fegnolia 1	*	1066
WICHITA COUNTY—		
Jack Farabee et al, L. F. Ramming 1	*	1952
Golding & Cochran, Waggoner Bros. 21-C, sec 17	45	1321
King Royalty Co., Waggoner Est. 7-H	335	1579
Regal Oil Co., 1st. Nat'l Bank 7-B, blk 44	20	1239
WILBARGER COUNTY—		
Lawson & Leavell, Waggoner Est. 3-A, sec 109	400	1445
Staley & Wynne, Waggoner Est. 2-W, sec 9	10	1982
YOUNG COUNTY—		
L. T. Burns et al, Hamilton 3, sec 1394	*	970
Cato Oil Co., Hamilton 7, sec 1393	40	922
R. D. Compton et al, J. D. Rushing 1, sec 212	*	1040
Diamond C Inv. Co., G. P. Stewart 1	*	909
Pet. Producers Co., Belknap 15, sec 21	*	733
Rathke Oil Co., A. C. Casey 1, sec 1494	*	1000
Robert Oil Corp., J. McCarroll 1	408	3692
Underwood Drl. Co. & Campbell, Campbell 13-C, sec 3401	85	898
Wheeler & Brashear, Jeffery 10-B, sec 50	7	760

*Failures; †Junked; ¶Million cu. ft. gas.

DRISCOLL SPACING

Austin.—Railroad commission spacing rules issued for the Clara Driscoll field in Nueces County provide for spacing in the center of square 10-acre units.

This provision was contained in railroad commission orders issued last week. The operators are required to set 650 feet of surface casing, and the remaining rules follow the general requirement of four Southwest Texas rules.

Houston.—Feltex Oil Corporation is reported to have purchased the American Liberty Oil Company's Brown, Callon, South Texas Development Company A, B and C leases, including five wells, in the Conroe field, Montgomery County, for a cash consideration of $350,000.

Sun Oil Company has a contract to purchase crude on the above leases from American Liberty Oil Company along with an aggregate of 6000 barrels of Conroe crude from the operators.

It is understood that the deal with the Feltex Oil Corporation will help finance the projected pipe line from East Texas via Conroe to the Houston Ship Channel.

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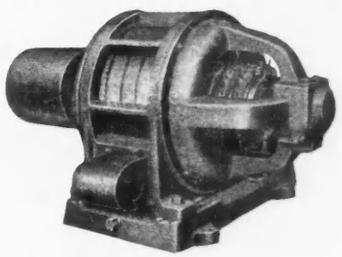

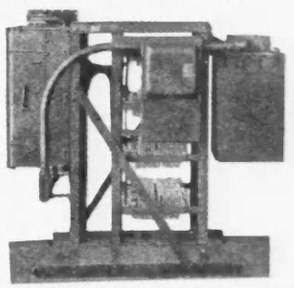

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LONG LAKE DEFINED

Northeast flank test to be plugged back to gas

WEEKLY STAFF REPORT

Palestine, Texas.—The oil producing area in the Long Lake field, Anderson County, was partially defined on the northwest flank of the structure when Jim Patton, Otis Phillips et al's J. W. Foche 1, SEc 80-acre lease, Jas. Madden Survey, failed to encounter oil sand in coring to 5350 feet, or 5049 feet sub-sea. The hole was carried to the approximate water level, and will be plugged back to complete as a gasser in sand topped at 5210 feet. Location is about 3000 feet northwest of oil production.

Tide Water Oil Company and Seaboard Oil Corporation are moving in materials to drill M. J. Reagan 1, a half-mile south by west of their recent oil completion on the Frank Evans 58.76-acre tract, John Adams Survey. The partnership has authorized two new locations on their discovery lease in the Cayuga field, including first test to be drilled in the northwest portion of the C. M. & C. Lutterloh 601-acre lease, Jas. Wilson Survey. The other will be on the north line of the J. N. Edens 988.6-acre, well No. 13.

In Freestone County, R. L. Clark and J. B. Cowden, Dallas producers and contractors, are moving in materials to explore the Woodbine sand horizon on a wildcat block centering six miles southeast of Streetman. Location will be on the W. E. Milner 46.27-acre tract, H. Awalt Survey. Lawrence B. Orchard, Fort Worth consulting geologist, prepared the detail geology.

Renewed efforts to develop oil production from Trinity sand series on the west flank of the Mexia structure, Limestone County, is about to materialize. C. F. Lytle, Sioux City, Iowa, and producer at Mexia, has erected derrick to drill in the southwest portion of the J. L. Thompson 141-acre tract. Location is about 1500 feet southeast of the original deep test that produced heavy gas flow with spray of oil at 5752 feet, but was junked while trying to land casing.

WOOD COUNTY

Tyler, Texas.—Gulf Production Company's C. D. McCollum 1, NEc 39.6-acre lease, Joseph Simpkins Survey, southwestern Wood County, failed to record any appreciable structural relief for the Alba area in logging Pecan chalk section at 2370-2612 feet, with an elevation of 456 feet. Drilling was in progress late last week below 2800 feet. Based on the first chalk marker this wildcat, which is testing the currently most highly rated structure in the Woodbine belt, is checking about level with logs of previously drilled tests in the general area.

R. L. Peveto, Howse and Thompson's C. M. Carr 1, projected Trinity sand test for the Talco area, northwestern Titus County, was drilling below 3250 feet, with a show of gas reported in the Woodbine. It is contracted to drill to 6200 feet, or test the lower Glenrose section of the Trinity, which is yielding prolific oil and gas wells at Rodessa, situated on the Louisiana-Texas border. Carr 1 logged Pecan chalk at 1612-1789 feet, with an elevation of 370 feet, and top of broken Austin chalk at 3011 feet.

MANY WEAK WELLS

Quarter of completions require aid in lifting

Tyler, Texas.—More than 25 percent of the 58 producers listed as completions in the East Texas field for the past week failed to register natural flow on initial gauges. There were 16 non-flowing wells added, and 12 were equipped for pumping upon completion, while the remainder established potentials by swabbing. Independent lease owners were credited with 33 of the new completions.

Advance of the posted price on January 9 to $1.15 has not reflected a change in field activity, with approximately 115 rigs in operation the past week. Increased development is generally anticipated among the small operating units, as the enlarged price posting assures a quicker amortization of capital investment in wells. Agitation for a higher production allowable for the field, else a second price advance will likely be launched by the independents within a few months.

Pete H. Pewitt, Longview, and others' O. J. Phillips 1, near southeast corner of 119-acre lease, Peter Whetstone Survey, recently opened additional acreage for development along the northwest flank of the structure in Upshur County by completing a small producer from sand topped at a sub-sea depth of 3322 feet. This well flowed 20 barrels of oil per hour by heads from sand at 3740-3760 feet, and is nearly a half-mile from nearest production.

PRODUCTION SALE

Dallas, Texas.—C. & G. Oil Company, Dallas, has consummated a deal involving the sale of its producing properties in the East Texas field to Alger Oil Company, Shreveport, for $200,000 cash and an additional consideration of 475,000 barrels of crude to be delivered from half of the net share of the production interest held by the former, according to E. B. Germany, president. The trade, effective January 8, included 18 wells operated by the C. & G. Oil Company in the Longview section of the field, or net interest in about 13 wells, situated on 80 acres plus. Current production will retire the oil delivery contract at rate of 1500 barrels daily, and C. & G. Oil Company receives four percent payable in oil, on the unpaid oil balance. The latter reserves the right to market its share of the oil.

Crude gathering system linking the properties was also bought by Alger Oil Company from C. & G. Oil Company, involving a cash sum of $20,000.

Alger Oil Company is one of a large group of companies formed by R. G. Trippett and A. H. Meadows, Shreveport, and John W. Gilliland, Longview, to operate in the East Texas field. The company bought a half interest in the original East Texas properties held by C. & G. Oil Company, representing stock interest in the company owned by Mrs. Tom E. Cranfill et al, last June for $100,000 cash and an additional $550,000 in notes.

EAST TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA—		
Arcadia Ref. Co., Green 13-A (55.56-ac)	3000	3760
Green 14-A (55.56-ac)	3000	3794
Atlantic, Arnold 5 (35-ac)	480	3935
Nick Barbare et al, Gilstrap 1 (2¼-ac)	60	3655
Propes 1 (5-ac)	60	3560
Chester Oil Co., Hale 3 (20-ac)	360	3629
Fischer & Elm Oil Co., Eaton 14-B (21.62-ac)	5000	3785
W. H. Gant-Garvin-Wegener, Goldberry 5 (253-ac)	300	3571
Genro Drlg. Co.-S. Roosth, McDavid 5 (22-ac)	750	3751
Great States Oil Corp., Smith 9	480	3650
Humble, Holt 14-C (99.63-ac)	3000	3739
Pilgreen 17 (136.4-ac)	2500	3753
Hunt Prod. Co., Bradford 9-F (55.8-ac)	300	3630
Marathon, Moores 29 (201.4-ac)	2500	3673
Retsal Drlg. Co., Maxwell 9 (34.93-ac)	360	3602
A. D. Roberts et al, Lauham 3-B (8½-ac)	4000	3776
Stanclind-Pure, Burton 17 (154.67-ac)	1500	3670
Sun, Lee 16 (147-ac)	2000	3621
Texas Canadian Oil Corp., Cooper 1-B (8-ac)	600	3707
Irion 10-C (27-ac)	4500	3751
Pace 5 (19.98-ac)	5000	3814
Pace 6 (48.64-ac)	2500	3818
KILGORE AREA—		
F. H. Brown, H. E. Oliver & Tide Water, Hindman 9 (23.89-ac)	8400	3627
Empire, E. L. Walker 9 (152.21-ac)	3000	3668
Gulf, Baton 9 (56.61-ac)	240	3643
Spear 33, Tr. 3 (277.56-ac)	6000	3614
Hurtle Oil Co., Williams 6	1500	3657
Williams 16	600	3654
Karona Oil Co., Peterson 5 (43-ac)	200	3639
Lee & Williams, Carter 2 (65-ac)	1500	3591
C. L. McMahon et al, Spear-Laird 16 (92¼-ac)	10,000	3684
Meco Prod. Co., Futch Cooper 6 (62-ac)	1500	3657
Midway Pet. Corp., Lawther 6 (35.31-ac)	3500	3582
Royal Pet. Corp., Taylor 5 (40-ac)	125	3620
Shell, Elder 12-B (73.03-ac)	6500	3532
Elder 30 (196.05-ac)	7600	3586
Laird 20-A (211.31-ac)	4000	3544
Jake Shulman et al, Hughey 2 (1.43-ac)	1500	3516
Sinclair Prairie, King 19-B, Tr 3 (90¾-ac)	5400	3456
Stewart Oil Co., Holt 8 (103.73-ac)	25	3568
Sun, Reese 16 (124.22-ac)	7200	3686
Texas Co., Walls 14 (104¾-ac)	6000	3671
Tide Water, Bivens 28 (202.7-ac)	8500	3657
LONGVIEW AREA—		
Arkansas F. O. Co., Adrian-McCrary 11 (65.64-ac)	7000	3515
Harrison 5-A (128-ac)	6800	3581
McKinley 13-A (96.74-ac)	7500	3614
Atlantic, Burnside 34-A (204.02-ac)	9600	3551
Judge 78 (455-ac)	10,500	3525
Ben G. Barnett et al, Tuttle 4 (40-ac)	480	3710
Fred Hargraves et al, Hargraves 2 (10-ac)	360	3765
T. A. Johnston & Owens, Victory 2 (1.32-ac)	1200	3633
Jones-Shelburne, Inc., Victory 2 (35.6-ac)	1500	3653
Magnolia, Ziegler 11 (83.18-ac)	50	3460
P. H. Pewitt et al, Phillips 1 (119-ac)	500	3777
Southland Drlg. Co.-United F&W Oil Co., O'Byrne 18 (304-ac)	6200	3695
Stanolind, Lathrop 20-B (114.8-ac)	4000	3613
Sun, Loden 12 (100-ac)	7000	3687
Tide Water, Moore 14 (90-ac)	8000	3543
VAN ZANDT COUNTY (Van Field)—		
Pure Oil Co., A. F. Magers 5 (72½-ac)	28	2983
HILL COUNTY—		
Roger Lacy et al, J. H. Atchison 1 *		2210

*Failures; †Junked; ¶Million cu. ft. gas.

Tomoconnor Prolific

TWO GOOD WELLS BRING TOTAL TO 29 PRODUCERS

SOUTH TEXAS

WEEKLY STAFF REPORT

Corpus Christi.—Two large producers were completed in the Tomoconnor field, Refugio County, to bring the total consecutive successes in that producing area to 29. This field has proved the most prolific in the entire Trans-Salt Dome Region from initial flow and possible recovery standpoint.

Quintana Petroleum Corporation's Tom O'Connor 28-a gauged 1301 barrels of pipe line oil per day through ⅜-inch choke from 5880 feet. It showed pressures of 860 pounds on tubing and 1300 pounds on casing. Same company completed 29-A for 1495 barrels of oil per day through ⅜-inch choke with 940 pounds tubing pressure and 1460 pounds casing pressure. It is bottomed at 5886 feet. Tom O'Connor 30-A and 31-A are active.

Greta Field

Humble Oil & Refining Company finished a nice producer in the 5900-foot sand in the Greta field. Fannie Heard 13 flowed 32 barrels per hour through ⅜-inch choke with pressures of 550 pounds on tubing and casing. It is in sand at 5912-20 feet, casing set at 5910 feet. United Production Corporation's W. J. Fox 16, in the Fox field, is completing at 5885-91 feet.

In San Patricio County, preparations are being made for an elaborate development campaign in the newly discovered Taft field. Camp sites have been secured by companies holding leases and housing projects announced suggest that this new pool will be given a heavy play. Only two wells, both offsets to the discovery, are active.

Plymouth field, just north, provided one producer and one failure, although eight wells are near the sand or already in process of completion. The failure was Heep Oil Corporation's E. H. Welder 11-A, Section 46, west side of the field, which stopped at 6163 feet. Plymouth Oil Company's Welder 26-C is good for about 10 barrels per hour through ⅛-inch choke from 5627-42 feet.

Stanolind Oil & Gas Company is making a complete test of Alamo Iron Works 1, three miles southwest of Sinton. The well has been cored most of the way and has been tested a number of times. It is reaming at 5409 feet.

A highly important wildcat location was staked in Nueces County during the week. It is Garland Clymore's Jonas Weil 1, northwest corner of tract one mile southeast of the Saxet Heights field. It is only 2000 feet from Corpus Christi's City limits and may extend that field to within townsite. The well is rigging up.

Benson Drilling Company and Westgate Oil Company's Phillips went to gas after being completed at 4095 feet, but has been deepened and is now producing a nice volume of oil. A slight west extension to this field was being provided by J. K. Culton's Whelan 2, which topped gas sand at 4070 feet and is coring sand at 4094 feet. A drill stem test from 4082-94 feet showed 240 pounds pressure and three fourbles of oil in nine minutes.

Other fields of the county reported only routine drilling. Several wells were being completed in the Saxet field in the several sands below 4000 feet.

Two wildcats were abandoned. Masterson et al's Walt Eschberger, 5½ miles southwest of Robstown, stopped at 6002 feet. Bluff Petroleum Corporation's Bluntzer 1, 10 miles north of Banquette, was stopped at 6053 feet.

L. A. Douglas' Mitchell 1, wildcat one mile southwest of Lolita in Jackson County, failed to pick up saturated sands just below 5000 feet and is being carried ahead to 6000-foot contract depth to be abandoned.

Barnsdall Oil Company and Felmont Oil Corporation were completing Pickering & Roos 1 to extend the 6000-foot horizon of the Placedo field, Victoria County, to the southwest. The well is at 5954 feet with casing set at 5942 feet. It flowed 33 gravity oil on drill stem test.

Costa Oil Company's Wright 1 is completing at 4786 feet, E. L. Smith Oil Company and Gulf Production Company's Wright 2 will not flow at 4768 feet and is preparing to pump. Westgate Oil Company is ready to drill plugs after coring oil sand at 4761-71 feet and setting casing at 4756 feet.

PETTUS SALT WATER

Live Oak area wildcat gets disappointment

Beeville.—Earl Callaway et al's Mozcygemba 1, Live Oak County wildcat, showed salt water in the Pettus sand at 3510 feet to dampen the prospect of production on a highly touted structure. The well is the third of a series of wildcats drilled on this block by Earl Callaway and associates after a rather elaborate sale of acreage spreads.

The above test, located in the north corner of Lot 122, George West subdivision, Block 2, Section 133, six miles southwest of George West, topped the Pettus sand at 3473 feet. It had broken sand to 3481 feet, sandy shale and shale to 3490 feet, hard sand cap to 3495 feet and soft water sand to 3510 feet. It is drilling ahead at 3670 feet to the Cook Mountain formation.

Live Oak County is receiving a light wildcatting campaign. L. W. Stieren is commencing a wildcat on the Smith tract in the Reese survey, six miles northeast of Oakville. Several other wildcat blocks have been assembled and tests are to be started shortly. In the southwestern portion of the county, Santa Clara Oil Company is coring for the Government Wells sand below 2960 feet in Corbett 1.

Dirks field, Bee County, recorded a few new producers to bring that field's development much closer to its conclusion. Six rigs are running in the field, being divided as follows: Devonian Oil Company, two; Home Oil Corporation, one; Illinois Petroleum Company, one; The Texas Company, two.

Goliad County is coming to the front with an interesting wildcatting play. Jane Oil Company (Diamond Half) has started a wildcat on the Gillette land near the North Pettus field. Zeni Oil Company's Lutenhacher 1, block 25, Goliad townsite survey, is rigging up. Port Isabel Oil & Gas Company's Duderstadt 1 has been located in the northeast corner of a tract in the S. Hall Survey, in the eastern end of the county.

COMPLETE GASSER

Starr wildcat plugged back from 4000 feet

Mission.—John Clopton's Bennett & Roos 3, Starr County wildcat six miles west of the Samfordyce field, is preparing to complete in the gas sand at 2461-2626 feet after drilling ahead to contract depth of 4003 feet. An electric formation tester was run after which casing was cemented at 2650 feet. It will be perforated at 2451-64 feet.

This well, located in Block 6, Clopton subdivision of Porcion 92, is one mile north of the Rio Grande. The production is believed to be about the same as the Samfordyce field which has completed about 120 producing oil wells in less than 16 months.

The Samfordyce field provided one producer during the week, has two wells on the sand in process of completion and two more drilling.

Sun Oil Company is drilling its third well on its new campaign in the Cuevitas field, north end of Starr County, the test being M. Guerra and Sons 10-A, located 500 feet north of production. It is down 1700 feet.

Paul Henshaw and K. D. Harrison have taken over Cook-Maris-Arnold's Starr County Cattle Company 1, Porcion 89, and will deepen it from 3813 feet.

In Hidalgo County, Union Sulphur Company's American Rio Grande Land & Irrigation Company 7, in the Mercedes field, is ready to spud.

Gulf States Oil Company's Engelman 2, Mestinas field, has been abandoned at 5777 feet with drill stem twisted off. Engelman 3, located 200 feet to the east is ready to move on. Same company will deepen Delta Orchards 1, one mile south of the above well. It is down 1675 feet. Burt McCollum is preparing to stake location for Engelman 1, two miles east and three miles south of the discovery well.

DUVAL WILDCATS

Three successes are marked up for week

Laredo.—Two wildcats were producing and a third was being completed in Duval County during the week to bring the Mirando district's 1936 activity to the highest level in history. Development to follow the opening of these new producing spots should bring the number of active rigs in this single county to near 100.

Rogers Oil & Gas Company's Sutherland 1, southeast corner of Section 120, one mile west of the Hoffman gas field, was being completed in Loma Novia sand at 2863-85 feet, elevation 725 feet, rotary table. It previously had shown gas, oil and salt water in the Government Wells sand below 2700 feet.

Rogers Drilling Company was having liner trouble and was preparing to set a new one. The well apparently will flow when finally completed.

The Hoffman field, which lies east of the Sarnosa Area and South of the Loma Novia field, has been in the lime light for more than a year with several wildcats attempting to establish oil production on the gas structure. Bridwell Oil Company completed one producer at 2718 feet in the Government Wells sand. Harvey & Henderson completed a producer two miles west of the field at 2662 feet. Neither well made a large volume of oil. This discovery, however, suggests that an important new producing area has been opened.

Westheimer & Daube's Z. Campos 2, 330 feet north and east of the center of Section 224 and slightly more than a half-mile east of Seven Sisters field, is showing some oil at 2687 feet in the Loma Novia sand. It had sand at 2672-84 feet and sandy shale 2684-87 feet. It established the third producing horizon for the Seven Sisters district, the other two being in the Hockleyensis and in the Government Wells sections.

The Westheimer and Daube well flowed 25 barrels of oil per hour through three eighths choke and showed pressures of 290 pounds on tubing and 500 pounds on casing.

The third wildcat holding interest is J. H. Candler's Rita S. de Pena 2, in the extreme southwestern corner of the county. The well cored sand at 2808-24 feet and sandy shale at 2824-32 feet and is ready to set casing. A drill stem test was made at 2808-14 feet which showed a little gas and some oily mud. Cored to its present depth, the showing increased and completion is to be attempted. Elevation is 674 feet, derrick floor.

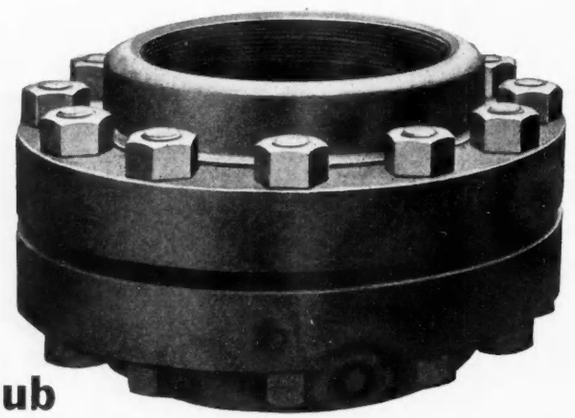
The above well is 4290 feet from the southwest line and 1394 feet from the northwest line of the tract in Share 4, Mesquite grant, located two miles east of the southeast corner of the Cole field.

Loma Novia and Seven Sisters fields, Duval County, continue their drilling orgy. The week brought a total of 14 completions in the two fields, showing an initial flow of 8555 barrels of oil per day through choke. More tests were commenced during the week than wells completed, as has been the case for the past several months.

Over in Webb County, Lopez field is the main activity spot with a hot offsetting campaign being carried on by independent operators. Thus far no major company has any production in this 2200-foot Mirando sand producing area.

Cole field provided several producers during the week, they being by the Magnolia Petroleum Company and The Texas Company.

MECO



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SOUTH TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BEE COUNTY—		
Illinois Pet. Co., I. Hall 5, T. J. Butler sur (Dirks)	500	3901
Mrs. Wm. Rapp 2, C. A. Dugat sur (Dirks)	600	3867
D. C. Smith, W. A. Robertson 1, 150 ft nl and wl of T. B. Barton sur (Plummer)	*	3059
Texas Co., S. E. Young 14, G. Young sur (Dirks)	650	3918
BEXAR COUNTY—		
Fred Thorman, A. L. Slam 1, P. N. Hays sur No. 3	*	50
Roe & Nixon, P. Morrisey 2, 2260 ft sel, 1545 ft nel of 222-ac tr, T. Webb sur No. 91	*	250
DUVAL COUNTY—		
Bridwell Oil Co., C. W. Hahl 1, sec 76 (Loma Novia)	480	2591
Buchanan & Blanco, J. F. Welder Heirs 6, sec 385 (Seven Sisters)	750	2237
J. F. Welder 7, sec 385 (Seven Sisters)	650	2495
California Co., Gruy Est. 2, 990 ft nl and el sec 157	*	2765
Gilcrease Oil Co., J. W. Byland, blk 4, sec 78 (Loma Novia)	900	2616
Claud Hamill et al, C. W. Hahl 9-C, 63 (Loma Novia)	550	2593
C. W. Hahl 2-D, sec 76 (Loma Novia)	450	2611
Highland Oil Co., Bishop 4, sec 76 (Loma Novia)	525	2587
M. C. Hubbard	1800	2692
Humble, M. C. Hubbard 1-B, sec 72 (Loma Novia) lcn changed	*	lcn
Wm. Hubbard 6-A, sec 84 (Loma Novia)	120	2821
Magnolia, Brennan-Benavides 26, blk 353, Hale sub, Arispe gr (Cole)	168	2764
Brennan Benavides 28, blk 490, Hale sub, Arispe gr (Cole)	75	2833
Duval-Worden, 330 ft nl and wl sec 153	*	3982
Mid-Continent Pet. Corp., R. Serna, Jr. 5, sec 384 (Seven Sisters)	1000	2478
Reynosa Oil Co., M. A. Davidson 1-A, sec 114 (Loma Novia)	450	2581
Santa Clara Oil Co. & Henderson, J. F. Welder 4-C, sec 381 (Seven Sisters)	900	2425
Smith & Hamill, M. C. Hubbard 31, sec 77 (Loma Novia)	480	2710
Texas Co., M. W. Brennan 10, blk 462, Hale sub, Arispe gr (Cole)	350	2828
M. Vela 18, sec 42 (Loma Novia)	400	2638
Trinity Drillers, C. D. Sevier 1, 330 ft nl and el sec 68, Sweden Farm Lands	*	4002
GUADALUPE COUNTY—		
Wilson & Sterling, Staples School 1, Staples townsite, Allen sur (Staples)	*	814
HIDALGO COUNTY—		
Gulf States Oil Co., J. C. Engelman 2, lot 3, blk 70, Mestinas gr (Mestinas)	†	5777
REFUGIO COUNTY—		
Humble, Fannie Heard 13, Ximines sur (Greta)	950	5920
Quintana Pet. Corp., Tom O'Connor 28-A, Swisher sur No. 3 (Tomoconnor)	2000	5880
Tom O'Connor 29-A, Swisher sur No. 3 (Tomoconnor)	2500	5870
SAN PATRICIO COUNTY—		
Heep Oil Corp., E. H. Welder 11-E, sec 46, Welder sub (Plymouth)	*	6163
Plymouth Oil Co., E. H. Welder 26-C, sec 71 (Plymouth)	500	5642
STARR COUNTY—		
John Clopton, Domingo Garza, 150 ft nl, 1418 ft el blk 1, sh 37-A, por 80	*	1753
Fech Oil Co., F. Doyno 4, blk 4, sh 77-A, por 81 (Rio Grande City)	25	1458
H. J. Porter et al, Garcia 4, por 100 (Samfordyce)	250	2786
WEBB COUNTY—		
California & Mills Bennett, W. C. Billings 1, 1500 ft el, 2600 ft sl of sec 45	*	3406
G. G. Mortimer, A. Montemayor 1, sh 7-B, sec 114 (Lopez)	*	2460
A. Lopez 3, sec 111 (Lopez)	650	2230
J. P. Nash, B. Benavides 6, blk 251, Hale sub, Arispe gr (Cole)	650	2825
Texla Oil Co., S. Benavides 2-A, blk 249, Hale sub, Arispe gr (Cole)	*	2870
WILLIAMSON COUNTY—		
Michalk & Clark, Bachmeyer 1, H. White sur (Byersville)	*	1035
B. E. Pierce, C. Matteck 2, H. White sur (Byersville)	*	1085

Company, Well and Location	Init. Prod. Bbls.	Depth
ZAPATA COUNTY—		
Nash & Clover O&G Co., A. P. Haynes 5, blk 7, Haynes sub, Comitas gr (Comitas)	50	868
Texas Co., Whitehead 81, C. Blanco gr (Escobas)	50	1221

*Failures; †Junked; ¶Million cu. ft. gas.

RAISE PLYMOUTH

Austin.—The allowable for the Plymouth field in San Patricio County has been increased 1890 barrels by an order of the Texas Railroad Commission issued last week. This results in a total field allowable of 5590 barrels per day and an average allowable of 130 barrels per well.

A 30 percent cut was ordered on January 1, but when chokes were installed to effect this reduction the wells lost pressure rapidly, according to railroad commission engineers who made tests on them. Most of the wells in the field are producing through ⅛-inch chokes.

BALCONES FAULT

Scattered wildcat tests hold much interest

San Antonio.—A number of scattered wildcats are being drilled in the Balcones fault zone to completely divide interest in this district. Frio County, due to the completion of a large Austin chalk producer, is probably the brightest spot.

Amerada Petroleum Corporation's Cory & McWilliams 1, Arocha Survey, 2¾ miles southwest of Pearsall production, Frio County, is making hole below 3450 feet. Thornton Davis has commenced a test one mile west of Navarro sand production in this district. It is Halff & Oppenheimer 1, J. D. Clare Survey, making hole below 450 feet.

Seven miles south of San Antonio in Bexar County, Jos Deupree is setting casing at 980 feet after drilling to 1001 feet in William Russell 1, F. Rodriguez Survey. The test is giving some promise of production in Taylor marl. In the same general area, this operator is drilling below 1100 feet in Coffey 1-A. This test showed for a gasser in the Austin chalk at 1058-63 feet, but it was cemented off to deepen.

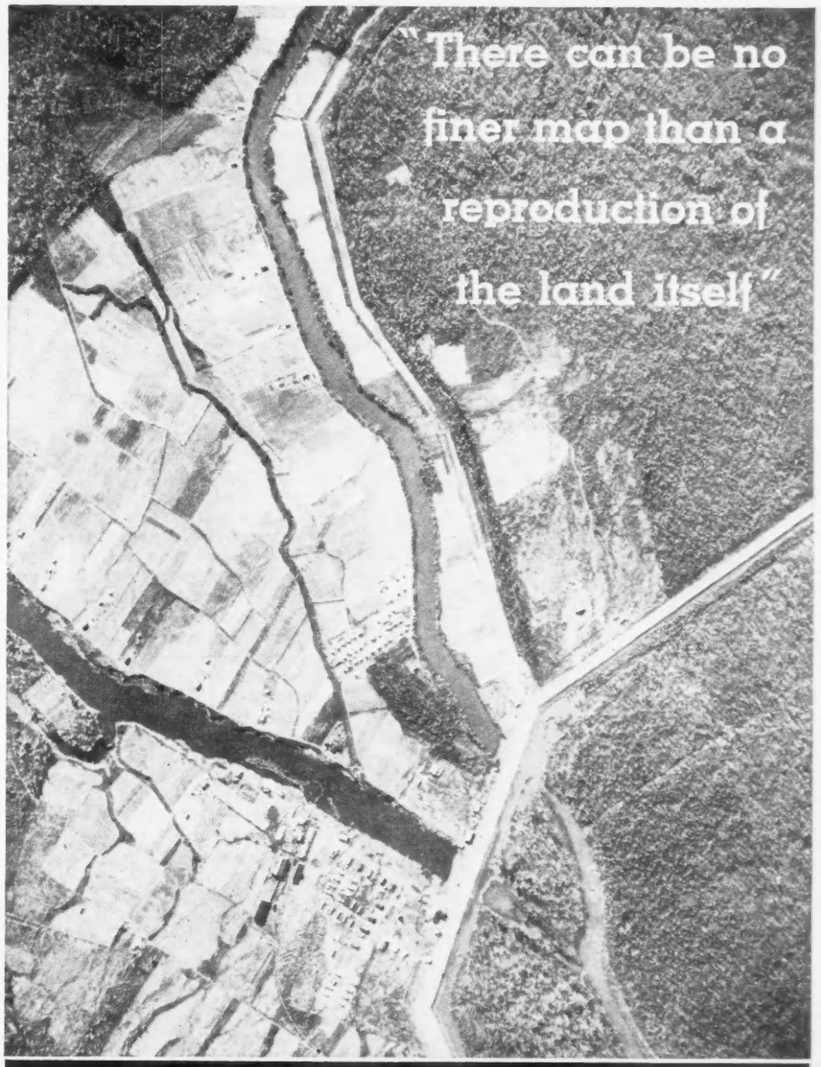
Eickenroht & Gallagher's O. H. Jahns 1, northeast corner of the tract in the Green DeWitt Survey, three miles southwest of the South Darst Creek field, Guadalupe County, has derrick up and is ready to move in rig. This well will attempt to extend production down the Darst Creek faulting.

East of the Manford field, same county, Robbins et al's Manford 1 is standing 600 feet in fluid after acidizing with 800 gallons and is preparing to clean out and put on pump. Casing is set at 2439 feet with the bottom of the hole 2581 feet in the Austin chalk.

The immediate Staples district in Caldwell and Guadalupe County is a beehive of activity, eight shallow rigs attempting to develop 800-foot Austin chalk production.

Caldwell County

Detroit-Texas Development Company is attempting to establish produc-



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tion on Buda lime in Dunlap 3-A, Dunlap field. Caldwell County. It is bottomed at 2589 feet, after topping Buda lime at 2275 feet and finding saturation at 2317-21 feet. Casing is set at 2073 feet.

A couple of wells in the northern portion of the county failed to develop production. Ogden & Reed's C. L. Lackey 1, three miles northeast of Dale, had dry serpentine at 1890-2561 feet and quit at 2581 feet. Sun Oil Company's J. W. Meiars 1, two miles south of North Dale field, had lime at 1938-48 feet and serpentine at 1948-63 feet and is coring at 2217 feet. It had a light oil show.

In Lee County, Mills et al's Batey 1, 14 miles northwest of Lexington, is testing a slight oil show in the base of the Georgetown, which was topped at 3152 feet. It drilled ahead to 3331 feet, topping the Edwards at 3314 feet and finding it dry.

Walter Blumenthal's G. V. Crain 1, Burleson County deep test, is making hole at 2265 feet.

McMULLEN GASSER

San Antonio.—Charles Hall et al's Lucy Claunch 1, wildcat a half-mile south of Calliham townsite, McMullen County, is preparing to complete as a gasser at 925-39 feet. The well is midway between the Calliham and South Calliham field, and may tend to line out a producing zone between the two. It is bottomed at 1260 feet in Pettus sand topped at 1255 feet. Casing is being run to 1000 feet for perforation in the Calliham sand at the 900-foot level.

Luray Oil Company had a little trouble with water breaking in on Glass 7, Calliham field test drilled to the Jacob sand at 1035-40 feet. Casing was recemented and the well is again in process of completion. Locations have been made for two more wells on the lease. This is the first production south of the river in the lower sand in the Calliham field.

V. G. Schimmell, Trustee's E. R. Hagist 1, half-mile west of the Loma Alta field, McMullen County, is coring at 2516 feet after showing a little mud cut with oil in a sand in the Government Wells zone at 2420-25 feet.

REFUGIO HEARING

Austin.—Hearing on the Refugio field, Refugio County, which was scheduled before the Railroad Commission last Monday has been recessed subject to call.

The purpose of the hearing is to determine whether wells operated by W. L. Pearson are oil or gas wells, according to Railroad Commission classification.

When the hearing was called last week attorneys for Pearson asked additional time to permit the installation of proper fittings on the five wells affected in order that an agreement of facts, determined by tests, might be obtained.

More Drilling

NEW WILDCAT LOCATIONS AND ANAHUAC FEATURE OF AREA

WEEKLY STAFF REPORT

Houston.—The Texas Gulf Coast area was without outstanding developments during the past week. Most important was the staking of a large number of new wildcat locations, and the starting of additional tests in proved areas. Apparently the district is to receive additional drilling, probably encouraged by the recent hike in crude oil prices. As far as completions were concerned, the most important were at Anahuac, which was being extended in three directions. The Labelle wildcat prospect test in Jefferson attracted attention when the well tried to blow out. Considerable attention was also focused on the Little Pine Island prospect test, which, according to reports, has encountered oil sands.

Sun Oil Company's Hebert Broussard 1, Labelle prospect, B. Blackmon Survey, Jefferson County, tried to blow out at 8339 feet during the past week with a drill stem in the hole. A sand was cored from 8329 to 8339 feet and with a drill stem in the hole the well tried to get out from under control. At the end of the week the well was drilling at 8377 feet in sandy shale with a slight showing of gas.

At Little Pine Island prospect, Glenn H. McCarthy's Howth 1, is creating lots of excitement with the well drilling as a "mystery" test. Various rumors are that the well has had showings of oil and gas. One rumor was that the well had 35 feet of oil sand at 7004 feet, however this could not be confirmed. At the end of the week the operators were drilling in shale at 7080 feet. The well is located in the T. & N. O. Survey, Section 70, Jefferson County.

Smith & McDannald et al announced location for Grinell 1, a wildcat in Jefferson County, north of Port Arthur, in the J. Grisby Survey. It is 330 feet east of the west line and 660 feet south of the north line of Block eight in the Bishop Subdivision, or 2620 feet southwest and along the northwest line of survey, from north corner thence 960 feet southeast at right angles.

Extend Anahuac

Gulf Production Company completed Knowles 1, in the Anahuac field, Chambers County, during the past week to extend the northern part of the field slightly east. The well came in for 27 barrels per hour through a quarter-inch choke with a tubing and casing pressure of 1000 pounds. The oil was 33.5 gravity and showed one percent wash water. The well was drilled to 7076 feet and topped the gas sand at 6855 feet and the oil sand at 7024 feet. Seven-inch casing was set at 7031 feet. This is the first oil well in the field for the company, and is located 200 feet west and 431 feet north of the southwest corner of the H. & T. C. Survey, Section 48.

The Anahuac field, Chambers County, was being extended one location east during the past week when Humble Oil & Refining Company's Hebert Broussard 3, H. & T. C. Survey, Section 59, found oil sand at 6981 feet and drilled to 7085 feet before setting seven-inch casing at 7040 feet. At the end of the week the well was being washed in.

The western side of the field was also being extended one location north. Humble Oil & Refining Company's Marshall 1, H. & T. C. Section 50, was waiting on cement to set at 7083 feet after setting seven-inch casing at 7041 feet. Top of the sand was found at 6908 feet.

Humble Oil & Refining Company has six new locations in the Anahuac field, Chambers County. Its Marshall 2 is 466 feet south of the north line and 996 feet east of the west line of a 160-acre tract in the H. & T. C. Survey, Section 50. H. A. Grippon 2 is 466 feet north of the south line and 466 feet west of the east line of a 320-acre tract in the H. & T. C. Survey, Section 51. W. C. Tyrell 3, is 466 feet south of the north line and 1317 feet west of the east line of survey. J. C. Wilcox 1 is in the H. & T. C. Survey, Section 50, being 466 feet east of the

TEXAS GULF COAST
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ANAHUAC—		
Gulf, Knowles 2	676	7075
Humble, Middleton 13	648	7083
White 5	291	7099
CLAY CREEK—		
Sun, Freeman 2	*	1684
HASTINGS—		
Humble, Nelson 2	695	6082
LIVINGSTON—		
Humble, Grandbury 22	306	4238
MANVEL—		
Texas Co., Belcher A-13	¶	3730
MARKHAM—		
Powers Prod. Co., Meyers 4	70	3563
MYKAWA—		
Danciger Oil & Refining Co., Minnetex 4	360	4794
NASH—		
British American Oil Co., Nash 1	*	4152
PIERCE JUNCTION—		
Harrison & Abercrombie, Ritter 7	700	4878
TOMBALL—		
Humble, Holdereith B-1	¶2½	5541
L. E. Laird 1	¶2½	5561
BRAZORIA COUNTY—		
R. R. Osburn, Jones 1, w of West Columbia, J. Thompson sur	*	lcn.
MONTGOMERY COUNTY—		
Seagraves & Smith, Delta Land 1, e of Northwood, T. Sheppard sur	*	lcn.

*Failures; †Junked; ‡Million cu. ft. gas.

west line and 466 feet north of the south line of a 160-acre lease. M. Zappe 4 is 466 feet south of the north line and 466 feet west of the east line of a 320-acre tract in the H. & T. C. Survey, Section 51. Humble Oil & Refining Company's Broussard 7 is 1339 feet west of the east line and 873 feet east of No. 6 and 466 feet south of the north line in the H. & T. C. Survey, Section 63.

Seagraves & Smith abandoned location for Delta Land 1, which was 330 feet out of the most westerly southwest corner of the T. Sheppard Survey, Abstract 448, in the Dacus area of Montgomery County. Chapman & Smith made location for a new wildcat well in this area. It is Delta Land 1, which is 688 feet south and 444 feet east of the northwest corner of T. Sheppard Survey, Montgomery County.

A new semi-wildcat location was made by West Production Company southeast of the Conroe field, Montgomery County. It is Foster Lumber Company 4, 466 feet north and 466 feet west of the southeast corner of the T. & N. O. Survey, Section 3.

J. T. Lightfoot has announced location for a wildcat well seven and three quarter-miles northeast of Corrigan in Polk County. Lynch Davidson 1, is 2503 feet from the north line of survey, 2719 feet west of west line of George Albritton Survey in the Houston County School Land Survey, Abstract 270 on a 1166-acre tract.

The Burnett Bay prospect received its first wildcat test during the past week when Cockburn Oil Company made location for T. W. Thompkins 1, in the Nathaniel Lynch Survey, Harris County. It is 9375 feet from the north line and 5350 feet from the east line of the survey. This prospect was worked by reflection seismograph by Shell Petroleum Corporation in 1934. Within a radius of two miles of Burnett Bay, The Texas Company worked with reflection in July, 1934. Sun Oil Company worked in May, 1934, and Standard Oil Company of Kansas worked with reflection in June, 1933. Humble Oil & Refining Company has several thousand acres under lease in the Burnett Bay and Shell Petroleum Corporation has leases along the water edge. Stanolind Oil & Gas Company also has leases in this area.

Diadem Oil Company has made its second location in the South Houston field, Harris County. Summers 1 is 500 feet west and 150 feet north of Diadem Oil Company's Dean 1, which was one of the best wells completed in the field to date, or approximately 1080 feet west and 2200 feet north of the southwest corner of the H. & T. B. Survey, No. 5, in the center of block 138, being in the Mary Nichols Survey.

Extend Hastings

The western part of the Hastings field, Brazoria County, was extended one location to the north during the past week when Humble Oil & Refining Company completed its Nelson 2, which is a north offset to Nelson 1, H. & T. B. Survey, No. 36. The well came in for 695 barrels per day through a quarter-inch choke with a tubing pressure of 925 pounds; casing pressure 950 pounds. The gas oil ratio was 406 to 1.

Stanolind Oil & Gas Company has made three new locations in the Hastings field, Brazoria County. Autrey 1 is 240 feet south and 330 feet east of the northeast corner of a 207.8-acre tract in the H. & T. B. Survey, No. 37. The well is a south offset to Stanolind Oil & Gas Company's Berger 1, the last extension test completed on the southern flank of the field.

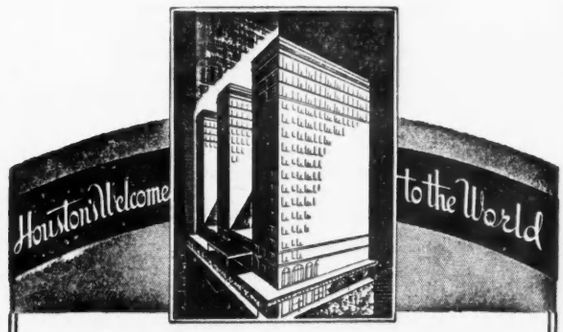
Stanolind Oil & Gas Company's Autrey 2 is 240 feet south and 350 feet west of the most northerly northeast corner of a 207.8-acre tract in the H. & T. B. Survey, No. 37.

The same operator's C. A. Cannon 2 is 330 feet east and 330 feet south of the northwest corner of a 40-acre tract in the H. & T. B. Survey, No. 36.

British American Oil Company's W. F. Nash 1, on the southeast flank of the Nash field, T. Alsberry Survey, Brazoria County, was abandoned during the past week at 4142 feet after failing to pump or lift the oil out by air.

The well had sand showing oil from 4102 to 4105 feet and from 4107 to 4112 feet. A drill stem test from 4125 to 4142 feet tested dry. Seven-inch casing was set at 4098 feet. The operators tried to pump and air lift the well but it would not flow.

Skelly Oil Company has started developing the Van Vleck field, Matagorda County. During the past week the company made location for three new wells after completing three wells in the newly discovered sands. Skelly Oil Company's F. C. Metzer 1 is in



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the M. Cummings Survey and is 466 feet south of the north line and 466 feet east of the west line of a 178-acre tract. Cobb B-4 is 440 feet north of the south line and 1910 feet east of the west line of lease in the M. Cummings Survey. Cobb B-5 is 1100 feet north of the south line and 466 feet east of the west line of lease in the M. Cummings Survey.

Coyle Concord's Powell 2-B, Garwood area, I. & G. N. Survey, Section 45, Colorado County, was pulling tubing to rework the hole after the test failed to flow oil which was shown on a drill stem test. After setting seven-inch casing the well was washed for 10 hours and would not flow. It was swabbed eight times and started flowing mud and wash water, a little gas and a small amount of oil through a three eighths-inch choke. The tubing was lowered and was rewashed and the test "kicked off" and made wash water and a little oil in a 45-minute head. The well built up a pressure of 600 pounds.

Sterling Oil & Refining Company has made its second wildcat location on the East Bernard prospect in Wharton County. A. Genzer 1 is 466 feet out of the southeast corner of a 80.6-acre tract being west 80 feet of north 160 acres in the J. Scott Survey.

15 COMPLETIONS

Houston.—There were 15 completions in the Texas Gulf Coast the past seven-day period, of which eight were oil wells with an initial production of 3745 barrels of crude oil. There were three gas wells completed in the area, two in the Tomball field, Montgomery County, for 5,000,000 cubic feet of gas daily. One gas well was completed in the Manvel field, Brazoria County, but there was no estimate of the volume. The remaining four wells were failures.

Routine Work

LOUISIANA COAST REPORTS NO STARTLING NEWS

Lake Charles.—Jefferson Lake Oil Company's Lake Pigneur 274, Jefferson Island Dome, township 12 south, range 5 east, Iberia Parish, is cutting and pulling screen and liner at 8464 feet to take another core and make a drill stem test. The previous week the well showed salt water after swabbing at 3000 feet.

The operators set seven-inch casing at 8397 feet. Fifteen feet of five-inch 70-mesh screen, a 10-foot packer and two and half-inch tubing was hung at 8462 feet. After washing for five hours the well flowed wash water with a trace of oil. The swab was run to 3000 feet and it started making salt water.

Superior Oil Producing Company and Woodley Petroleum Company have made the second location in the new Bayou Mallet field, Acadia Parish. Adams Smith 2 is 2100 feet north and 100 feet east of Adams Smith 1, Section 47-7s-1e. The discovery well is now shut in and will be opened again as soon as operators have installed equipment that will take the distillate out of the gas. The well made 6,000,000 cubic feet of gas daily along with 30 barrels of distillate.

Gillis Field

Fohs Oil Company completed Wasey 2, in the Gillis field, Calcasieu Parish, during the past week for 950 barrels daily, being one of the best wells in the area. The hole was drilled to 7085 feet and seven-inch casing set at 7075 feet. Casing was perforated from 7063 to 7071 feet. The well came in for 950 barrels daily through a quarter-inch choke casing pressure of 600 pounds. The well also made 500,000 cubic feet of gas. The oil tested 42 gravity.

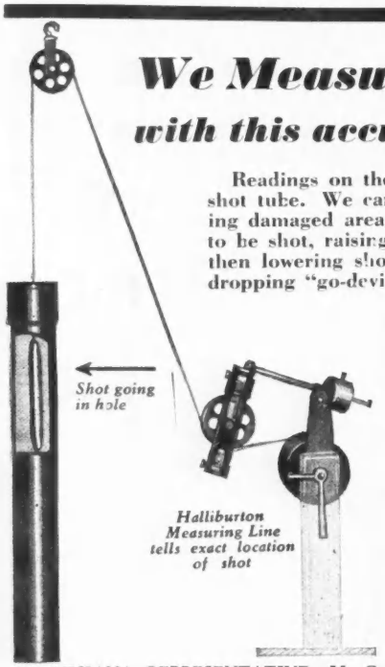
Union Sulphur Company reworked State 9, Gillis field, and converted it into a dry gasser. After drilling to 6764 feet the hole was plugged back to 6745 feet. Sand was found from 6735 to 6745 feet. The well came in making dry gas. The closed in pressure was 2200 pounds.

The same operator's State 14, Section 11-9s-8w, perforated five-inch casing from 6721 to 6731 feet with 53 holes. On a drill stem test it made five fourbles of oil and two joints of mud through quarter-inch chokes in five minutes. The operators then swabbed to 5600 feet and the well failed to show anything. Tubing will be pulled and reset for another production test.

Union Sulphur Company's Mayo Reeves 5, Section 12-9s-8w, is waiting on cemnet to set at 6733 feet after setting seven-inch casing at that depth. The oil sand was topped at 6743 feet.

On the north edge of the Vinton field, Calcasieu Parish, Bay City Oil Company is reported to be contemplating a test. The well will be located in the southwest quarter of Section 23-10s-12w.

The Texas Company has made location for Miami Corporation 2, 355 feet north and 194 feet west of Miami Corporation 1, which was completed at 3900 feet after drilling to 9331 feet, being 93,745 feet west and 16,885 feet north of the southeast corner of township 14 south, range 10 west, in Section 15-14s-13w. The Texas Company's Miami Corporation 1, which was the deepest test drilled in the Cameron Meadows field, Cameron Parish, drilled into salt at 9318 feet. The well had a showing of oil at 8709 feet in sand. It is reported that Miami Corporation 2 will drill to this sand and test the formation.



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SOUTH LOUISIANA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CAMERON MEADOWS—		
Burton Sutton Oil Co., School Land 11	498	3761
ENGLISH BAYOU—		
Fohs Oil Co., Wasey 2	950	7085
GILLIS—		
Union Sulphur, State 9 (wo)	¶	6745
LEESVILLE—		
Gulf, Allen Land 7	80	3650
SULPHUR—		
Union Sulphur, Fee 815	1667	3336
Fee 818	580	3805
VINTON—		
Wilson Broach Oil Co., Strip 16	300	3688
WHITE CASTLE—		
Shell, White Castle Shingle & Lumber Co. 2	*	5469

*Failures; †Junked; ¶Million cu. ft. gas.

East Extension

RODESSA ADDS EIGHT OIL WELLS FOR TOTAL OF 50

NORTH LOUISIANA

WEEKLY STAFF REPORT

Shreveport.—Although Rodessa had the largest week in its history for the seven-day period ending January 16, adding eight oil producers to boost the total in the field to 50, the center of interest in the field was Bartex Drilling Company's B. H. Norton 1, center SE NE 18-23n-15w, 1½ miles east of production.

This test was to be brought in through tubing late in the week after drilling plug in seven-inch casing cemented at 5998 feet, top of the saturated Young lime and drilled to 6029 feet, with saturation all the way. Special equipment heretofore not used in this territory was employed, drilling ahead being done under 600 pounds of pressure. The well was allowed to flow for two hours through eighth-inch casing choke making 30 barrels per hour. Elevation is 265 feet.

Approximately 1½ miles farther east, Lion Oil Refining Company's J. M. Wynn 1, NE SW 9-23n-15w, with elevation of 361 feet, logged top of the anhydrite at 5212 feet, and later was drilling below 5500 feet.

The eight producers completed in Rodessa during the week were: United Gas Public Service Company's Brewer 1, SW SW 21-23n-16w, depth 5980 feet, flowing 50 barrels of oil per hour through half-inch choke; Bremer 2, Section 22-23n-16w depth 6009 feet, flowing 38 barrels of oil per hour through half-inch choke; Bremer 3, Section 22-23n-16w, 6005 feet, flowing 60 barrels of oil per hour through half-inch choke; V. I. Miller 1, NW NW 14-23n-16w, 6008 feet, flowing 58 barrels of oil per hour through half-inch choke; and Rodessa Oil & Land Company 6, Section 15-23n-16w, 5991 feet flowing 52 barrels of oil per hour through half-inch choke; Arkansas-Louisiana Gas Company's Rodessa Oil & Land Company 6, Section 23-23n-16w, 5995 feet, flowing 81 barrels per hour through half-inch choke, this being the first oil well in the Rodessa townsite; R. W. Norton's Tyson 2, NW NE 13-23n-16w, flowing 33 barrels per hour through quarter-inch choke at 6060 feet; Pelican Oil & Gasoline Company's Sexton 7, Section 14-23n-16w, 6021 feet, flowing 32 barrels per hour through quarter-inch choke.

Among new locations made in Rodessa last week were two outpost tests, United Gas Public Service Company's Kate Crowley 1, Benjamin Murray Survey, a quarter-mile south of Norton's Haywood 1, and Haynes Production Company's Pitts 1, NW SE 12-23n-16w, northeast part of the field.

During the week Gulf Pipe Line Company's 18 miles of pipe line from Potters Station, Marion County, Texas, was completed to the Rodessa field. This company will handle approximately 10,000 barrels of oil from the field and it is reported it will handle the production from R. W. Norton's Haywood 1, Priscilla Evans Survey, Cass County, Texas, the only Rodessa oil producer in that state. Humble Oil & Refining Company has been handling the oil since completion of the well. It was handled for Standard Pipe Line Company.

Texas Leasing

Some leasing is still going on in Marion County at the extreme west end of the Rodessa Fault. Marathon Oil Company has taken 500 acres in the I. Moody, H. Powell, B. C. Fowler and J. H. Reed surveys for a consideration of $45 per acre. McAlester Fuel Oil Company is buying royalty acres in the same vicinity. Humble Oil & Refining Company has

Rodessa Drilling Report

Wells actively drilling last week in Rodessa follow:

Ark. La. Gas Co.'s Rodessa O&L Co. 7, 23-23n-16w, dr 5080 ft shale & anhydrite.

American Liberty O.I. Co.'s Rodgers 1, C. M. Robinson sur (Cass County, Texas), coring 6604 ft.

Bartex Pipe Line Co.'s B. H. Norton 1, se ne 18-23n-15w, flowed 30 bbls oil through one-eighth inch choke for 2 hours, running tub to test td 6029 ft. Sarah Bruner 2, 13-23n-16w, dr 1500 ft.

Danciger O&R Co.'s Willis 1, 23-23n-16w, dr 4851 ft.

Haynes Prod. Co.'s Caldwell 2, 12-23n-16w, dr 5903 ft shale & lime; Caldwell 3, 11-23n-16w, dr 4010 ft shale; Lawton 6, 14-23n-16w, wocs 7-in csg 5857 ft td 5883 ft; Lawton 7, 14-23n-16w, dr 4335 ft lime; Pitts 2, 14-23n-16w, dr 5126 ft anhydrite; Sexton 5, 14-23n-16w, wocs 5959 ft. Sexton 6, 14-23n-16w, dr 5108 ft shale & lime; Zylks 1, 9-23n-16w, dr 2750 ft shale.

Lion O&R Co.'s Jno. M. Wynn 1, ne sw 9-23n-15w, elev 361 ft top anhydrite 5212 ft dr 5550 ft.

R. W. Norton's Levee Bd. A-3, 21-23n-16w, wocs 7-in csg 5920 ft. Mary Rives 1, (Cass County, Texas), dr 4865 ft. Mary Rives 2, (Cass County, Texas), spd set surf csg wocs.

Pelican Oil & Gasoline Co.'s Sexton 8, 14-23n-16w, dr 5810 ft lime; Sexton 9, 14-23n-16w, dr plug 10-in csg 2046 ft. Sexton 10, 14-23n-16w, dr 5165 ft shale & anhydrite; Sexton 11, 14-23n-16w, spd wocs 16-in csg 400 ft. Sexton 12, 14-23n-16w, dr 4070 ft shale & shells.

Perkins & Marr's Hunter 2, 13-23n-16w, dr below surf csg.

United Gas Pub. Serv. Co.'s Ardis 3, 14-23n-16w, straightening hole 2795 ft. Ardis 4, 14-23n-16w, spd dr 1990 ft. Bremer 4, 22-23n-16w, testing td 6005 ft. Mitchell 1, se sw nw 20-23n-16w, wocs 6005 ft. Rodessa O&L Co. 4, 22-23n-16w, wocs 6010 ft. Rodessa O&L Co. 5, 22-23n-16w, dr 5695 ft. Rodessa O&L Co. 8, spd. Spearman 1, 15-23n-16w, dr 5850 ft. Spearman 2, nw nw 22-23n-16w, dr 3841 ft. Tyson A-1, 14-23n-16w, dr 4890 ft. Tyson 2, 14-23n-16w, dr 5212 ft. Tyson 3, 13-23n-16w, dr 3430 ft. Tyson 4, 13-23n-16w, dr 5046 ft. Tyson 5, 13-23n-16w, spd wocs td 440 ft.

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taken over 1000 acres around the C. Lowenstein Survey paying about $45 per acre. Some have mapped this area as outside possible production but others believe it potentially productive and this may be taken to be a fair criterion of western edge lease prices.

Two shooting crews were working last week in Marion County. Sinclair Prairie Oil Company had a crew east of Lodi and United Gas Public Service Company's crew was northeast of Jefferson, in Cass County, with Shell Petroleum Corporation having a crew in Marion County six miles northwest of Lodi.

Twenty-two miles northeast of Marshall, in Harrison County, Killingsworth Oil Company of Longview has assembled a block for a Woodbine test to start by February 2. The block centers around the Edward Robertson and John Smith Surveys.

LEASING ACTIVE

North Louisiana Basin area continues interesting

Shreveport.—Much activity is under way in the North Louisiana Basin between the Sabine and Monroe Uplifts extending as far south as the Angelina-Caldwell Flexure.

Last week H. L. Hunt, Incorporated, placed on record 60,925 acres of leases in La Salle, Catahoula and Caldwell Parishes, most of it having been secured from the Louisiana Central Lumber Company. Other acreage owned by the same lumber company probably was secured farther north. Of the acreage placed on record 56,435 acres were in La Salle Parish where is located the shallow Urania field that produces from the Claiborne-Wilcox contact at 1500 feet; 3556 acres were in Caldwell Parish and 934 acres in Catahoula Parish.

In the vicinity of the shallow White Sulphur area in LaSalle Parish, where 10 years ago Smitherman & McDonald completed several small oil wells at 700 feet, Gulf Refining Company has a reflection seimograph crew at work. In this same area Independent Exploration Company's geophysical party has completed its work reportedly for Tidewater-Texas Seaboard Oil Company and has departed for South Louisiana.

Lide & Greer, who drilled the oolitic lime gasser in Lincoln Parish that gave great impetus to the North Louisiana Basin activity, and sold the gas rights to Arkansas-Louisiana Gas Company, have traded the gas rights on their block centering around Section 12-16n-5w, Bienville Parish, where they are drilling a well, to Arkansas-Louisaina Gas Company for acreage in Rodessa. These operators sold 500 acres in this block to Shell Petroleum Corporation for $25,000 and Gulf Refining Company has contracted to buy 1500 acres in the same block for $75,000. The latter recently took 4000 acres in Bienville Parish centering in Section 23-16n-7w, from C. A. Tooke and Walter George which carries a 2700-foot drilling obligation. When this depth is reached if formations are satisfactory the test may be taken to 5000 feet. Russ et al are core drilling a Bienville block centering in 17 north, range seven west.

Bossier Showing

Reported to have logged 14 feet of oolitic lime below the anhydrite in the Glen Rose at 5246-5260 feet, Producers Oil & Gas Company last week was setting seven-inch casing in Pettit 1, NE SW 17-17n-11w, east of Glen Rose gas production in the Sligo gas field, Bossier Parish, found around 4200 feet. Elevation of the test is 198 feet and the only announced contact was the chalk at 1104 feet.

The reported showing of gas has caused a considerable lease play east of Sligo.

Sugar Creek Syndicate and United Gas Public Service Company last week were reaming to bottom below 4800 feet to set 10-inch casing to test a showing of oil in 15 feet of sand and sandy shale said to have shown oil at 4972-87 feet, in a proposed 9000-foot test in the Sugar Creek gas field, Darrett 2, Section 31-21n-5w. This test logged top of the chalk at 2169 feet. The Sugar Creek gas field, which is unitized, produces a saturated gas in oolitic lime below anhydrite at 4300 feet.

Ohio Oil Company's R. L. Holloway 6, Section 23-21n-10w, a proposed 10,000-foot test in the Cotton Valley field, Webster Parish, where highly saturated gas and a few oil wells have been completed in oolitic lime of the Glen Rose at 4400-4500 feet, is drilling below 4300 feet.

Amerada Petroleum Corporation's Weil 2, a 990-foot offset from its Weil 1, Section 51-1s-2e, Rapides Parish, completed recently as a 200-barrel oil well below 5700 feet, last week was drilling sand and streaks of shale at 5585 feet after reported gas showings at 5531-37 feet, 5547-49 feet and 5550-54 feet.

NORTH LOUISIANA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CALDWELL PARISH—		
G. W. Zeigen et al, La. Cent. Lbr. Co. 1, 25-13n-3e	*	2004
LA SALLE PARISH (Urania)—		
Dr. D. C. Isles, Urania Lbr. Co. 1, 3-9n-1e	25	1515
OUACHITA PARISH (Monroe)—		
Interstate Nat. Gas Co., Fee 39-B, 19-19n-4e	¶34	2190
SABINE PARISH (Converse)—		
Helena O&G Co., Frost Lbr. Ind. A-2, 19-9n-13w	35	1800
SABINE PARISH (Zwolle)—		
A. H. Tarver, Baker 1, 36-8n-12w	†	4410
UNION PARISH (Monroe)—		
United Carbon Co., Stovall 2, 28-21n-3e	¶1	2132

*Failures; †Junked; ¶Million cu. ft. gas.

26 PERMITS

Shreveport.—Twenty-six drilling permits were authorized last week by the minerals division, Louisiana Conservation Commission. Of these, 13 were in Caddo Parish, including 12 in the Rodessa field. Besides these 13 there were four others in North Louisiana divided among the following parishes: Lincoln, one; Sabine, two, and Union, one. The nine in South Louisiana were divided among the following parishes: Calcasieu, one; Cameron, two; Iberia, two; Plaquemine, two; St. Landry, one, and St. Mary, one.

THIRD PRODUCER

Rainbow City well makes 1200 barrels

WEEKLY STAFF REPORT

El Dorado, Ark.—The third producing well in the recently discovered Sullivant sand, one of the lenses in the Rainbow City field, Union County, was completed in J. E. Crosbie, Incorporated's Sullivant 3, NE SE NW 12-17-14, a quarter-mile from the other producers, completed at total depth of 3168 feet and flowing an estimated 1200 barrels daily. Location was made for Sullivant 4, an offset by the same company.

Two new locations were made in Arkansas last week. Ohio Oil Company made location for Pumphrey 6, SE NW 12-17-14, and is preparing to pull casing and deepen Furlong 3, in the same section, from 3013 feet, giving this part of the field five active tests.

The other location was Ouachita Drilling Company's Alfred Langley 1, SW SE SW 19-15-15, Ouachita County.

One Permit

One drilling permit was issued last week by the Arkansas Board of Conservation. This test is Alfred Langley 1, located 330 feet north and east SW SE SW 19-15-15, Ouachita County, two miles northwest of the discovery well in the Smackover field, to be drilled by Ouachita Drilling Company of Camden, Arkansas.

ARKANSAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
GRANT COUNTY—		
Wallace & Neill, Harrison 1, 25-6-15	*	2034
LA FAYETTE COUNTY—		
S. H. Riggs et al, DuBose 1, 25-15-24	*	2828
MILLER COUNTY (Garland City)—		
Fitzwater et al, E. H. Beck 1, 34-15-26	50	2920
NEVADA COUNTY—		
Sneed & O'Mara, Munn 1, 16-14 22	*	2519

*Failures; †Junked; ¶Million cu. ft. gas.

ALABAMA

Mobile, Ala.—C. F. Palmer has taken approximately 5000 acres of land for a test contemplated for the coming summer in Choctaw County, Alabama, around the town of Bladen Springs on the Hatechetigbee Anticline.

EIGHT COMPLETIONS

Lake Charles.—Initial production for the six new producers in the Louisiana Gulf Coast during the past week was 4075 barrels. Of the eight completions, one was a gas well with no estimate on the volume of production, one a dry hole and the six producers.

Lea Wildcat Shows

NORTHWEST TEST AGAIN DEEMED PROMISING

WEEKLY STAFF REPORT

Hobbs, N. M.—Northwestern Lea County wildcat test of Sam K. Vierson et al on the W. D. Robinson tract, C NW SE 14-11s-32e, renewed its bid for oil production last week when deeper drilling uncovered oil saturation in lime at 4213 feet, or 142 feet above sea level. Reports indicate that the last five feet of formation carried oil, and operations halted to use formation tester. This isolated wildcat looked promising recently when oil stained lime at 4110-4137 feet caused the owners to cement seven-inch casing at 3680 feet when drill stem tests brought negative results. The well made water when given a production test through casing after drilling out cement plugs. However, the water proved to be brackish instead of sulphur when analyzed by a major company, and for this reason the test is not eliminated as a potential producer from the regular Lea County dolomite lime zone. The presence of the water is believed to be due to casing being landed at a high level. Free oil appearing from the first porous lime zone was classed as "dead" oil, while that in the lower pay is said to be high gravity.

Potential rating of 200 barrels daily has been credited to Neville G. Penrose, Arch Rowan and J. M. Rush's Will Cary-Humble 1, C NW SW 22-22s-37e, eastern Lea County producer in sandy-lime formation at 3535-3555 feet. Initial production test through two-inch tubing amounted to 148 barrels of pipe line oil on 14-hour gauge, with 300 pounds back pressure on casing. This wildcat has been in process of completion since mid-December. Skelly Oil Company et al's B. F. Harrison 1, C NW SW 5-23s-37e, which reached the producing zone a week earlier and encountered sulphur water in drilling into dolomite limestone at 3796 feet, has not been given a production test since given 870-quart nitro shot in sandy-lime at 3491-3762 feet. In the meantime Skelly Oil Company has three nearby tests drilling on short-term leases, and one was due to reach the producing zone late last week. The company staked its fourth location for the area last week, being B. L. King 1, C SW SE 32-22s-37e,

Four Monument Locations.

Monument field added four new locations the past week, including three by Amerada Petroleum Corporation and one by Gypsy Oil Company. Amerada Petroleum Corporation's State 1-K, C SE NW 29-19s-37e, situated about three quarters of a mile south by east of production, will stimulate drilling if successful in attaining production. Chas. H. Weir 1-A, C NW SW 25-19s-36e, is on a line between the original field and the northeast extension area, while materials have been moved in for the drilling of J. R. Phillips 1, NEc NE NE 1-20s-36e. The latter is the first 330-foot spacing made by the company, and was made an exception to the center of 40-acre unit plan because of offset being 330 feet from property line. Gypsy Oil Company is moving in materials to drill Chas. H. Weir 1, C NE NE 35-19s-36e.

Amerada Petroleum Corporation's State 1-I, C NE NW 2-20s-36e, first attempt to drill the oil pay in the Monument field with cable tools, was flowing 714 barrels of oil while drilling at 3883 feet. Rotary was used in drilling through the heavy gas zone to 3817 feet, and seven-inch pipe cemented at 3810 feet. The Texas Company's H. T. Mattern 1, C NW SW 20-19s-37e, located on the east edge of the field as now outlined, has been completed swabbing 370 barrels daily after using acid at 3965 feet, or 318 feet sub-sea. Skelly Oil Company's State 1-D, C SE SE 1-20s-36e, flowed 30 barrels hourly on four-hour gauge through tubing from lime at 3890 feet, or 321 feet below sea level. Packer was installed on tubing to eliminate flow of gas estimated at more than 50,000,000 cubic feet daily. Seven-inch pipe was cemented at 3792 feet.

Good Eunice Producer

Geo. F. Getty Oil Company's State 1-B, C NE NE 16-21s-36e, ranks among the largest natural producers in the Eunice field through having gauged 243 barrels oil per hour through 1¼-inch choke on three-inch tubing from lime pay at 3790-3885 feet. The gas volume is rated at 14,500,000 cubic feet daily. The hole is bottomed at a sub-sea depth of 296 feet. The single new location announced for the field last week consisted of Gypsy Oil Company's State-East-Bell 1, C NW NW 15-21s-36e.

Multiple acid treatment given The Texas Company's J. M. Dean-Pure 1, C SE SW 28-22s-36e, located several miles south of the Eunice field, has failed to yield oil or gas production in commercial quantities. The log recorded favorable porosity in lime section in coring to 3810 feet, or 312 feet sub-sea, and seven-inch pipe was cemented at 3642 feet.

Humble Oil & Refining Company's E. E. Hunter 1, C NW NW 24-24s-36e, east flank location for Cooper area, failed to make an oil producer in drilling to water at 3757 feet, and has been completed with an initial yield of 902,000 cubic feet of gas through three-quarter inch choke on tubing after plugging back to 3536 feet and perforating casing at 2900-3200 feet with 51 shot holes. Gypsy Oil Company's J. M. Cooper 2, C NW SE 14-24s-36e, has been plugged back from water at 3698 feet, or 359 feet sub-sea, to 3694 feet. The hole was bridged back to 3656 feet and shot with 300 quarts of nitro at 3475-3575 feet. Cleanout work is now in progress. Rotary rig was replaced by cable tools to drill below 3410 feet.

Sweet gas production estimated at 34,000,000 cubic feet daily was developed by The Texas Company, Amerada Petroleum Corporation and Columbian Carbon Company's Cagle 1-B, C NW SW 15-26s-37e, South Jal area, with the hole bottomed at 3164 feet. Production is to be diverted to the natural gas line serving El Paso and points beyond in Mexico, New Mexico and Arizona.

MOUNTAIN STATES

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
NEW MEXICO		
LEA COUNTY (Cooper Field)—		
Humble, E. E. Hunter 1, c nw nw 24-24s-36e	¶3	3757
LEA COUNTY (Eunice Field)—		
Geo. F. Getty Oil Co., State 1-B, c ne ne 16-21s-36e	¶14½-7500	3885
LEA COUNTY (South Jal Field)—		
The Texas Co. et al, Cagle 1-B, c nw sw 15-26s-37e	¶34	3164
LEA COUNTY (Monument Field)—		
The Texas Co., H. T. Mattern 1, c nw sw 20-19s-37e	370	3965
LEA COUNTY (Wildcat)—		
N. G. Penrose, Arch Rowan & J. M. Rush, Will Cary 1, c nw sw 22-22s-37e	200	3555
MONTANA		
GLACIER COUNTY (Cut Bank Field)—		
Montana Power Gas Co., Benish 1, sw nw 9-33n-5w	50	2802
PONDERA COUNTY (Pondera Area)—		
Dave Mills, A. L. Erickson 1, sw sw sw 3-27n-4w	40	1912
WYOMING		
HOT SPRINGS COUNTY (Grass Creek)—		
Ohio Oil Co., Mill Iron Cattle Co., 72, ne se se 19-46n-98w	774	3933

*Failures; †Junked; ¶Million cu. ft. gas.

NEW MEXICO RUNS

Hobbs, New Mexico.—Crude production in New Mexico during December, as indicated by actual pipe line runs, amounted to 1,810,262 barrels, or a daily average of 58,395 barrels, according to C. G. Staley, deputy for the New Mexico Oil Conservation Commission. Production averaged 3605 barrels daily below the 62,000-barrel quota authorized for December by the state body, but exceeded the figure recommended by the United States Bureau of Mines by 2895 barrels daily.

Extending Garland

NEW SAND AND MUCH AREA MAY BE ADDED TO FIELD

ROCKY MOUNTAIN FIELDS

WEEKLY STAFF REPORT

Casper, Wyo.—Principal interest in Wyoming operations focused on Kinney-Coastal Oil Company's Government 1, NW NE 24-56n-97w, Park County side of Garland anticline. The well flowed 4,000,000 cubic feet of gas daily through the tubing 100 feet above the oil saturated Tensleep. Loose whipstock at 4140 feet prevented lowering of tubing into Tensleep where cores recovered from 4245-55 feet showed excellent saturation.

Hole bottoms at 5258 feet in the shale and company is drilling up iron preparatory to deepening into a second Tensleep section which is thicker and more highly productive of gas on top of the Garland structure. No oil has yet been developed in the Tensleep on Garland though oil wells completed below in the Madison have tested large gas flows in the Embar and Tensleep formations. The Kinney-Coastal well is two miles northwest of the Garland development grouped on the very high of the structure. Should the well develop oil in the Tensleep, in addition to adding a new Wyoming oil productive zone, it will add several thousand acres to proved limits at Garland.

Rock River Recompletion

Ohio Oil Company's State Land 3, CEL SE NE 34-20n-78w, an old Dakota producer, in the Rock River field, Carbon County, central Wyoming, deepened to the Sundance at 3255 feet and recompleted in the new productive zone for 212 barrels pumping in the first 13 hours.

In the same field, Ohio Oil Company is rigging up to deepen to the Sundance: Harrison-Cooper 3, NWc S½ 35-20n-78w, completed in 1920 in the Dakota sand for 1400 barrels initial at 2808 feet, and Harrison-Cooper 8, SW SW 35-20n-78w, completed in 1921 in the Dakota for 750 barrels initial at 2989 feet.

Joint operation of Ohio Oil Company and The California Company State 2, CNW NW 36-21n-79w, Big Medicine Bow Dome, is recementing with plug to 5452 feet to shut out bottom hole water in the lower part of the first Sundance. The well on test through tubing from the second Sundance at 5625-98 feet yielded 200 barrels of hot sulphur water an hour, and around the tubing and through the seven-inch production string showed water and oil from the first Sundance at 5474-5544 feet.

First drill stem test in the well on the way down showed 135 barrels of uncut oil per hour and 16,000,000 cubic feet of gas daily from the first sand between 5474-5505 feet. The well is defined as on the water table line and restricts the Sundance to around 800 acres at Big Medicine.

The same joint operators' Union Pacific 1, Account 1, NE SW SW 24-21n-79w, Big Medicine, is drilling Morrison shale at 4987 feet.

The California Company's Holst 3, NE SW SE 13-17n-77w, test headed for the undrilled Sundance sand on Quealy Dome, Albany County, Southern Wyoming, is shut down at 1230 feet repairing boilers. Quealy Dome, a 1935 discovery has two wells with production developed from the Dakota sand and the Muddy sand.

After swabbing tests failed to produce results, J. M. Huber Corporation is again lowering two-inch tubing into the Sundance in its Lance Creek extension test and preparing to pump in an effort to locate and then shut off bottom water. The test, Jose 1, NE SE NW 6-35n-65w, on the west sharp-dip side of Lance Creek anticline, is plugged back to 4032 feet. Oil saturation was shown in core recoveries between 4003-4037 feet, and water developed from 4037 feet to total depth of 4072 feet in red beds. The well, if completed commercially, will add 2480 acres to the Niobrara County field.

In the same field, Ohio Oil Company has a well nearing the critical depth, Converse Sheep Company 7, CNW SE 32-36n-65w, drilling shale at 3243 feet. Ohio's Converse Sheep 6, CNW SE 32-36n-56w, is drilling at 1854 feet.

Placing a 40-quart shot of nitro-glycerin in the sand at 2145-89 feet, Mountain Fuel Supply Company recompleted Brooks 1, CNW NE 15-16n-104w, South Baxter Basin gas field, Sweetwater County, southwestern Wyoming, for 1,280,000 cubic feet of gas daily. The well, completed 2 weeks ago for 700,000 cubic feet daily, extends the proved area one half mile east.

Northern Wyoming

One well was shut down and one new location was announced in the northern Wyoming oil fields this week. The Ohio Oil Company released location for Mill Iron Cattle Company 73, CNE SW SE 19-46n-98w, in the Grass Creek field, Hot Springs County.

Stanolind Oil & Gas Company is waiting on cement to set around the 10¾-inch casing at 1100 feet in State-Ridgley 20, SE NE SE 19-46n-98w, Grass Creek field.

Peter Evanoff has shut down McAllister 1, NW NE 24-56n-98w, in the Big Horn County side of the Garland field, after drilling to 2325 feet. At 2270-2290 feet an estimated three to 4,000,000 cubic feet of gas was developed.

Yale Oil Corporation's Allen Oil Company 1, SE NW SE 33-56n-97w, Garland field, Big Horn County, is drilling at 3690 feet with the Tensleep formation topped at 3300 feet.

Henry Harriman's Government 1, NW NE SE 14-56n-98w, is cleaning out with hole bottomed at 2165 feet. Well is south extension test to the Big Horn County side of the Garland anticline.

In the Byron field, Big Horn County, just next to the Garland field, Sidney H. Keoughan and Taylor Oil Company are drilling new hole below 4750 feet in Hoskins 1, lot 59 SE SE 25-56n-97w.

Byron Field

Two operations are reported in the Byron field by the Ohio Oil Company; Charlotte Lindsay 1, CNW NE 23-56n-97w, which is drilling at 2919 feet and Byron-Union 4, CSW NE 22-56n-97w, drilling shale at 4311 feet.

The California Exploration Company is recementing the 8⅝-inch casing at 3880 feet in Government 2, NW SW NW 7-44n-96w, on Waugh Dome field, Hot Springs County. Operators are not getting results as water had broken in from above. Excellent oil saturation in the Embar lime had been shown and well was preparing to rig up rods and tubing for a pumping test. Hole bottoms at 4245 feet.

In the Hidden Dome field, Washakie County, Arlt and Doyle's Government 1, SW SW SE 29-48n-90w, is drilling at 1012 feet and Christensen and Thorne's Government 2, NW SW SW 31-48n-90w, is drilling at 430 feet.

CUT BANK ACTIVE

Great Falls, Mont.—Drilling operations in the Cut Bank field, Glacier County, northern Montana, picked up to its former activity and showed for a good week while the Kevin-Sunburst field, Toole County, northern Montana, was practically idle. Of the 10 wells in the Kevin-Sunburst field, eight were shut down.

There were four wells completing, one near completion and two wells starting in the Cut Bank field. An excellent well was placed on production by Montana Power Gas Company in Benish 1, CSW NW 9-33n-5w, which swabbed in for 214 barrels in the first 24 hours. Depth is at 2832 feet.

The Texas Company's Fee 4, SW 15-35n-6w, swabbed 135 barrels in the first 12 hours at 2917 feet.

R. C. Tarrant, independent oil operator in Montana, had a busy week with two wells completing and releasing location for two new wells. His Jones 1, NW SW 31-34n-5w, pumped 85 barrels of oil with hole bottomed at 2858 feet. Hole filled with 1500 feet of oil.

Tarrant's Hope 2, SW SW 18-34n-5w, which is nearing completion, will be shot with 80 quarts of nitro-glycerine. Oil rose 300 feet in the hole and will make a small producer. Depth is at 2778 feet.

R. C. Tarrant released location for State 2, CNE SE 36-34n-6w, and Haglund, Jr. 7, CNW SW 13-34n-6w.

The Montana-Dakota Utilities Company's deep test in the Cedar Creek field, Baker-Glendive anticline, eastern Montana, Unit 1, NE NE NE 17-4n-62e, is coring at 5973 feet. Well was shut down at 5882 feet to install new engine.

Daniels Petroleum Company's May 1, CSE SE 13-1s-36e, in the Hardin field, Big Horn County, is shut down awaiting orders at 3000 feet. The 6¼-inch casing at 2895 feet was recemented.

Nearing 11,000 Feet

KETTLEMAN TEST BELOW OLD DEPTH IN NEW HOLE

WEEKLY STAFF REPORT

Los Angeles.—Several tests drilling in Kern County and the San Joaquin Valley around the middle of January were being watched closely, since two or three wells have a chance to prove up certain areas and may bring about new drilling.

Near Bakersfield, about one mile east of the Fruitvale field, Elliott Core Drilling Company's Elliott 1, 14-29-27, cored a saturated oil sand from 3053 to 3080 feet, and formation tester is being run. Last casing was 16-inch landed at 527 feet. Ten feet of shale directly overlies the oil sand, giving a good seat for the casing if it is set at this stage. The 27 feet of oil sand is in the Martin zone, productive at Fruitvale, and the depth checks fairly close to Fruitvale. If a production test is decided against now, the hole will be carried down to the lower Kernco sands.

Another test of special interest is J. E. O'Donnell's Bloomer-Jeppi 1, Section 17-30-27, midway between Edison and Mountain View, which flows a few hours at the time at a daily rate of 165 barrels. The hole was drilled to 5555 feet, and then plugged back to 5495 feet before being placed on production. The test is not considered conclusive and so far no new tests have been started in the area, but it is likely one if not two new holes will be drilled to test the possibilities of the territory between the two fields.

Two deep tests, one fast nearing 11,000 feet, are also drawing attention of the scouts. Union Oil Company's Lillis & Welch 1, Section 24-21-16, Kettleman Hills North Dome outskirt test, on January 13 was coring at 10,964 feet, which is 20 feet below old bottom, where a serious fishing job held up operations. The last two cores showed hard sand with no report as to oil content. Coring will continue, probably to 11,500 feet or even more if results justify. This hole for a time was the deepest in the world with bottom at 10,944 feet. It then was being drilled by North Kettleman Oil & Gas Association (Ed. McAdams) and later was taken over by Union Oil Company.

The second deep hole is also being drilled by Union Oil Company at North Belridge in Kern County. At last reports Gibson 7 had reached 9034 feet in very hard sand. String of seven-inch was cemented in this hole at 8565 feet.

Standard Oil Company's McPhail 3 in the same field has bottom of hole at 8253 feet and 9⅝-inch has been cemented at 8250 feet. The landing of this size casing at the depth mentioned makes it possible to drill to a very great depth, if it is found necessary.

In the Midway-Sunset area of Kern County, Chief Oil Company's Francis 1, Section 6-11-13, picked up a nice oil sand from 2750 to 2763 feet, known as the Kinsey zone. The hole has gone to 3200 feet and will be plugged back for a production test. A new drilling campaign for that area will result if this well develops into a paying producer.

Barnsdall Oil Company is making its first bid for production in the Round Mountain area of Kern County by staking location for Caldwell 1 in Section 7-28s-29e, on an 80-acre lease. The new test offsets Shell Oil Company's Caldwell 2, which was completed Christmas Eve for 895 barrels of 17.8 gravity clean oil.

Middle Dome Corporation's No. 73-30V, Section 30-23-19, with bottom at 7790 feet, is preparing for a production test. This well is located in the Kettleman Hills Middle Dome and the production test will have a real bearing on the drilling campaign in this area in 1936. String 9⅝-inch was cemented at 7585 feet. Standard Oil Company's No. 38-29V, Section 29-23-19, same area, with bottom at 7885 feet, is idle after plugging back to 7760 feet.

SHIPMENTS OFF

Los Angeles.—According to preliminary figures on off-shore shipments of crude oil and petroleum products from California during 1935, the total movement was off almost 10,000,000 barrels. The tanker movement to East Coast represented most of the decline. These preliminaries are furnished by the Oil Producers Agency of California.

Exports during 1935 from California to Pacific foreign were 7986 barrels daily more than during 1934, most of the increase being crude oil to Canada and Japan. Atlantic foreign shipments also increased from 8875 barrels daily average in 1934 to 15,460 barrels a day.

CALIFORNIA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
INGLEWOOD—		
Standard, Vickers 1	360	3190
HUNTINGTON BEACH—		
D. D. Dunlap Oil Co., Kirk 1	50	4760
VENICE—		
Otis Hoyt No. 1	175	6640
KETTLEMAN HILLS—		
Kettleman No. Dome Assn. No. 47-18J	580	8465
No. 6-20J	650	8201
BELRIDGE—		
Continental, Result 6	400	8235
EDISON—		
Shell, Cauley 2	95	4510
No. American Oil Cons. Brown 3	185	1615
General, Knapp 6	410	1484
Jergins Tr., McCowan 7	30	1249
KERN FRONT—		
C. C. M. Oil Co., No. 51	215	2114
BUENA VISTA LAKE—		
Ohio, K.C.L. A-4	¶5	4221
TRACY—		
Amerada, F.D.L. 1	¶6	4070
F.D.L. 3	¶65	4029

*Failures; †Junked; ¶Million cu. ft. gas.

Drilling Increase

LOS ANGELES OPERATORS SEEK MORE LIGHT OIL

Los Angeles.—There has been a noticeable increase in drilling operations in the proven fields in Los Angeles Basin the past three to four weeks, in an effort to increase production of light crude during 1936, in spite of the fact storage of this type of crude has shown a gain the past few months.

General Petroleum Corporation is drilling four holes at inside locations in this field, and Standard Oil Company started a new hole January 7. The Texas Company is busy at one hole and Union Oil Company has five strings of tools busy, has staked two new locations and is rigging up to start work at another location.

Long Beach continues to be the busiest field in the Basin, the work being largely in the hands of independents, although Shell Oil Company has two strings of tools going and has foundations in for another hole soon to start. The Texas Company is busy at one hole, ready for completion.

Some distance west of the Long Beach field proper, Shell Oil Company is making an effort to either extend the field or prove a new area. Amebco 1, Section 13-4-13, is coring gray sand at 4835 feet, and it is understood will be a fairly deep test unless production is found higher up.

A further test of the El Segundo area is in prospect as Republic Petroleum Company has staked location for its second hole to be drilled 450 feet west of first test, which came in September 2 for 175 barrels of 24.5 gravity oil, cutting 15 percent.

West American Oil Company's Del Amo 1, Section 3-4-13, south of the old Dominguez field in Los Angeles County, is coring shale and sand at 4040

feet, but so far no showings of importance have been reported. Acreage in this general area is held in small tracts, and should an oil well be completed, a general drilling campaign would result, which would be similar to a town-lot campaign unless it proved to be too deep for the small operator.

Another test demanding special notice is Sovereign Oil Corporation's Ben Long 1, in the old Lawndale area to 8766 feet and has been plugged back to 8287 feet. This hole has string of 12¾-inch cemented at 1100 feet, and 900 feet of 5¾-inch liner, including 566 feet of perforated, has been cemented for the second time, preparatory to a production test.

Near Barstow in San Bernardino County, in the desert country, Equitable Petroleum Exploration Company's No. 1 in Section 11-10-5, is showing considerable gas. The hole has a total depth of 1999 feet, and a string of 8⅝-inch including 170 feet of perforated, has been run to bottom. Cementing was through perforations at 1829 feet. It is understood a Los Angeles refiner has signed a contract to take the gas, if and when.

Crude Shortage

PREMIUMS BEING PAID IN EFFORT TO SUPPLY PLANTS

WEEKLY STAFF REPORT

Mt. Pleasant, Mich.—Premiums are being offered by at least four independent pipe line companies in Michigan, ranging from five to 22 cents a barrel over the posted field price, which was boosted 10 cents a barrel to a five-year high of $1.32, January 14, for all Central Michigan grades. The Ogemaw field price was increased from $1.06 to $1.16 per barrel.

The new price and the premium offers are chiefly resulting from a shortage of crude, estimated from 50 to 75 percent under the current market demand. Crude production in the state slumped from 45,700 barrels a day the week ending January 5 to 39,600 barrels daily the week ending January 12. The chief drop came in the Crystal-Ferris field which hit its lowest since brought to a flush stage last fall. The new figure was 13,000 barrels daily against a potential five months ago of 50,000 barrels daily. The field had an actual production of close to 30,000 barrels a day at its peak in October of 1935.

Neither of the two major carriers in Michigan, Pure Transportation Company and Simrall Pipe Line Company (now affiliated with Standard Oil Company of Ohio) are able to fill more than 50 percent of their demand on the basis of present production. Pure Transportation Company appears in the best position of any of the carriers with around 15,000 barrels daily of its parent company's oil, the bulk of which is settled production.

Simrall Pipe Line Company expects to have the new 140-mile, eight-inch line from Crystal to Toledo, Ohio, ready for service by February 1. Originally it was anticipated to handle around 10 to 12 thousand barrels daily at the start but at the present rate of production with no new production of consequence in immediate sight, probably not more than 50 percent of that figure will be available.

Neither of the two major carriers have offered premiums, according to their officials. However, both are active in attempting to increase connections.

The premiums are being offered by carriers either affiliated or contracted with Michigan independent refineries, which face a serious situation in relation to obtaining their charging stocks from Michigan fields. On the strength of a high flush production in 1934 and 1935, refinery construction took a spurt in the state with the present demand by small refineries ranging up to 45,000 barrels a day, or more than the total state output. Facing shutdowns or at least major curtailment of their daily runs, these refiners are waging a desperate fight to tie up connections. At least three major deals, involving producers and owners of plants now under construction, were reported pending this week.

MICHIGAN

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
GRATIOT COUNTY—		
A, J. White, Hallett 1, 12n-4w, c w w sw-31	*	lcn.
MIDLAND COUNTY—		
Pure, Hill 8, 13n-1w, ne se ne-18	100	3428
Braden & Saunder, Stapelton 4, 14n-2w, s n ne-13	40	3540
MONTCALM COUNTY—		
John Vale, Barger 1, 10n-5w, nw sw se-2	20	3196
Eastern Gulf, Race 1, 10n-5w, nw nw se-2	200	3197
Stork Oil Co., Dickinson 3, 10n-5w, nw nw se-3	50	3190
T. F. Caldwell, Flint 7, 11n-5w, se ne sw-35	75	3201
Hubbell Oil Co., Palmer 1, 11n-5w, sw se sw-14	*	260
Isabella Oil Co., Strait B-4, 11n-5w, se sw se se-34	50	3204
May Prey, Skinner 1, 12n-6w, se nw ne-9	*	3117
Ed Stewart, Peterson 1, 12n-7w, c ne nw-12	¶7½	1290
MECOSTA COUNTY—		
Wiser Oil Co., Bissell 1, 13n-7w, c se ne-30	¶5½	1370
OGEMAW COUNTY—		
Consolidated Pet., Crow 1, 22n-2e, nw ne sw-36	50	1800
J. C. Newell, Hustead 1, 22n-2e, sw se nw-36	20	2730
ROSCOMMON COUNTY—		
Molloy & Regan, Hilbourn 1, 22n-1w-18	*	1500
SAGINAW COUNTY—		
Smith Pet. Co., Morse-Getty 2, nw sw ne-20	250	1550
TUSCOLA COUNTY—		
L. B. Ayre, Kindler 1, 15n-7e-24	*	2940

*Failures; †Junked; ¶Million cu. ft. gas.

EASTERN FIELDS

WEEKLY STAFF REPORT

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
OHIO		
ASHLAND COUNTY—		
Ohio F. G. Co., Hamet 1	¶	2753
BELMONT COUNTY—		
E. L. Johnston & Co., McMinnis 8	3	90
CUYAHOGA COUNTY—		
C. A. McMillan, Fuhmeyer & Geisendorfer 1	¶	2602
COSHOCTON COUNTY—		
Frank Lyons & Co., Fair 1	*	1530
The Pure Oil Co., Clark 1	30	3224
GUERNSEY COUNTY—		
J. L. Bebout & Co., Quillan 1	20	3545
ATHENS COUNTY—		
Hocking Valley Drlg. Co., New York Coal Co. 1	¶	3817
Albany Gas Co., White 1	*	400
PERRY COUNTY—		
Ohio Fuel Gas Co., Winegardner 1	¶	930
Emmert 1	¶	2839
Thistle Oil Co., Stotler 10	*	1100
MEDINA COUNTY—		
Shamrock Oil Co., Meyers 10	10	501
E. R. Edson Son Co., Miller 70	3	90
Franks 46	*	545
Ohio Fuel Gas Co., Crocker 1	*	3417
HOLMES COUNTY—		
S. J. Bell & Co., Finley 1	¶	812
WASHINGTON COUNTY—		
Montgomery & Miller, Montgomery 12	*	1086
Montgomery 13	*	1066
NOBLE COUNTY—		
C. A. Heisler, Miller 1	1	1893
Union Gasoline Corp., Stobbs 1	1	....
MONROE COUNTY—		
J. C. Corner & Co., Piatt 4	5	1579
J. F. Graham & Co., Adams 1	¶	2055
F. O. Parks, Schneeberger 1	¶	1502
TUSCARAWAS COUNTY—		
States Dev. Co., Geckler 1	*	....
LORAIN COUNTY—		
Schneider & Wyles, Terrell 1	¶	2469
WEST VIRGINIA		
KANAWHA COUNTY—		
Columbia Carbon Co., Copenhaver, 2	¶	4931
G. L. Cabot, Inc., A. F. Verholt 1	*	4971
Ten Mile Oil & Gas Co., Dickinson 18	¶	....
G. L. Cabot, Inc., Putney 1	*	4900
United Fuel Gas Co., Casey 4508	¶	....
MARSHALL COUNTY—		
Cameron Light & Heat, Davis 5	¶	2165
PLEASANTS COUNTY—		
Ward & Co., Varner 21	*	1717
RITCHIE COUNTY—		
Samuel M. Summers, Jones 2	*	2125
WETZEL COUNTY—		
Manufacturers L. & Heat, Foland 1	¶	2153
Allen 1	¶	1014
Columbia Carbon Co., Adams 1	*	2787
DODDRIDGE COUNTY—		
Clifton Oil & Gas Co., Powell 1	¶	2140
CABELL COUNTY—		
Martin & Swanson, Childers 1	¶	3371
BOONE COUNTY—		
Pure Oil Co., Lafayette & Co. 1	*	2838

*Failures; †Junked; ¶Million cu. ft. gas.

THE OIL WEEKLY REPORT ON IMPORTANT

Wildcat Tests

ALABAMA

FRANKLIN COUNTY — McAlpine et al's Hobson et al 1, 26-8s-14w, elev 559 ft, arr to acidize at 2570-76 ft.

HOUSTON COUNTY — Rice O&G Co.'s Oakley Est. 1, nw sw 9-3n-29e, arr set 6-in csg after reported so & sg at 3438 ft (Tuscaloosa).

LAMAR COUNTY — DeSoto O&G Co.'s Gardner 1, nw nw 22-15-16, arr shoot formation at 3118-85 ft, otd 4900 ft lime.

ARKANSAS

CLARK COUNTY—B. Tribinoff, Tr.'s Gibbons 1, sw ne ne 27-8-18, sd for csg 556 ft.

COLUMBIA COUNTY—Magale & Elam's Garrett 1, ne ne sw 13-17-20, elev 352 ft, anhydrite 3135-3240 ft, top Arkadelphia 1735 ft, sw sand 3271-77 ft, dr 3820 ft.

GARLAND COUNTY—J. E. Elliott, Tr.'s D. Hauyst 1, ne se nw 22-2s-17w, wocs 94 ft.

GRANT COUNTY—Wallace & Neill's J. M. Harrison 1, ne nw se 25-6-15w, abn, td 2034 ft, Paleozoic formation.

HEMPSTEAD COUNTY—Dixie Drlg. Co.'s Vada Wheatley 1, nw sw ne 14-11-26, rur. Geo. L. Glass' May B. O'Brien 1, ne sw 32-12s-32w, ru and sd. F. W. Martin's Lafferty 2, se nw 17-14-27, sd 140 ft. Murdock, May & Easton's Conway 1, sw nw sw 20-12s-27w, wocs 12½ in csg 80 ft.

LA FAYETTE COUNTY—Earl F. Fox's Coleman 2, ne ne 30-16-24, top Nacatosh 1544 ft, dr 2050 ft. Erwin & Leach's Bodcaw Lbr. Co. 3, nw nw 20-16-23, rur. Joe Modisett et al's Frost Lbr. Co. 1 (sec. hole), spd set surf csg 160 ft, wocs. Transportation Pet. Co.'s Cochrane 1, ne se 26-19-25, elev 256 ft, sd 3428 ft.

MILLER COUNTY—King Oil Corp.'s G. W. Crank 1, sw ne 19-16-25, top Nacatosh 1950 ft, Annona chalk 2365-2735 ft, arr run electrical tester 4000 ft.

OUACHITA COUNTY—Griggsby & Aarnes' Burris 1, sw ne ne 19-15-19, sd 3000 ft, curing titles. W. B. Street, Tr.'s Rath & Cartier 1, sw sw ne 35-13-18, 7-in csg 1398 ft, arr deepen, td 1403 ft. Phillips Pet. Co.'s J. D. Reynolds 1, 27-15-15, rur. (6500 ft test).

POINSETT COUNTY—Rockwell Dev. Co.'s W. A. Smith 2, ne ne 13-11n-3e, dr 1439 ft.

PULASKI COUNTY—Base Line Oil Co.'s Wilson 1, sw ne se 28-1s-11w, wocs 123 ft.

UNION COUNTY — I. J. Allen's Union Sawmill Lbr. Co. 1, 8-17-12, coring 3045 ft. Ark.-Southern Oil Co.'s Laney 1, 32-19-16, sd 176 ft; Simmons 1, nw ne 15-18-13, dk. Earl Patterson's Shepard 1, sw se 27-17-15, dk.

CALIFORNIA

KERN COUNTY

BELRIDGE—Albert Beck's Beck-Bacon 1, 35-28-20, dr shale 1200 ft.

BUENA VISTA LAKE—Ohio's K.C.L.A. 5, 31-31-26, lcn.

COMANCHE POINT—Shell's Bank One 1, 15-32-29, sd 5394 ft. Tejon Ridge Oil Co.'s No. 1, 23-32-29, td 2182 ft flowing water.

DEVIL'S DEN—Cumberland Oil Co.'s Mabry 2, 17-26-18, sd 4360 ft, did not set casing.

EDISON—Navy Oil Co.'s Caravel 1, 19-30-30, td 1447 ft, pumping to exhaust water. R. & R. Dev. Co.'s R&R 1, 29-30-30, dr shale 700 ft.

FRUITVALE—Elliott Core Drilling Co.'s Elliott 1, 14-29-27, td 3080 ft, in oil sand, top of Martin zone at 3053 ft, to run formation tester.

GRAPEVINE—Silver Gate Co.'s Tejon 1, 7-10-19, td 2985 ft, wocs 6⅝-in 1870 ft.

KERN FRONT — Spayback & Gardner's Glide 1, 31-27-28, rur.

GREENFIELD—Speik Oil Co.'s (was United Explor. Co.) Ricornini 1, 23-30-27, co 4621 ft.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

*—*dry hole abandoned well.*	owdd—*old well drilling deeper.*
‡—*salt water (completions).*	owpb—*old well plugging back.*
†—*junked and abandoned.*	pb—*plugged back or plugging back.*
¶—*million feet of gas.*	r—*reaming.*
abd—*abandoned.*	rog—*rig on the ground.*
bbls—*barrels.*	rur—*rigging up rotary tools.*
br—*building rig.*	rust—*rigging up standard tools.*
b.s.—*basic sediment.*	sd—*shut down.*
csg—*casing.*	sdtr—*sidetracking.*
co—*cleaning out.*	sg—*show gas.*
dd—*drilling deeper.*	si—*shut in.*
dk—*derrick.*	so—*show oil.*
dr—*drilling.*	so & g—*show oil and gas.*
fsg.—*fishing.*	spd—*spudding.*
ft—*feet.*	sr—*straight reaming.*
hfw—*hole full of water.*	sw—*salt water.*
in—*inches.*	td—*total depth.*
lcn—*location.*	ur—*underreaming.*
m—*milling.*	wih—*water in the hole.*
mim—*moving in materials.*	wo—*workover.*
mit—*moving in tools.*	wocs—*waiting on cement to set.*
mot—*milling on tools.*	wosr—*waiting on standard rig.*
n, s, e, w—*north, south, east, west.*	
oih—*oil in hole.*	

KERNELL—Standard's United 1, 2-26-20, td 5857 ft, fsh.

McKITTRICK—Belmac Dr. Co.'s Douglas 1, 22-29-21, dr shale and sand 4750 ft.

MOUNTAIN VIEW—Standard's Harcia 1, 13-30-28, rig.

NO. MOUNT POSO—Santa Carla Oil Co.'s Glide 1, 7-26-28, sd 900 ft.

SO. BUTTONWILLOW — General's (was Seeple Oil Corp.) Doyle-McKeon 1, td 5452 ft, to deepen.

STEVENS AREA—Shell's K.C.L. 1, 29-30-26, lcn.

MISCELLANEOUS

FRESNO COUNTY—Jas. M. Conlon Co.'s Spenser 1, 30-19-15, spud. Milham Explor. Co.'s Baston Land Co. 1, 13-20-18, td 1150 ft. wocs 16-in 600 ft.

KINGS COUNTY—Royalty Service Co.'s No. 1, 16-24-18, dr shale and sand 1560 ft. Union's Giannini 1, 28-22-20, spud.

MADERA COUNTY—Pure's Chowchilla 2, 8-10-14, td 5592 ft, plug 2610 ft, making open hole gas test; Security 1, 6-10-14, td 2772 ft, plug 2500 ft, may abn.

MERCED COUNTY—J. R. Murrel's No. 1, 8-10-9, dr shale 641 ft.

TEHAMA COUNTY — Northern Counties Pet. Co.'s Ewers-Mooney 1, 25-24-3, td 5520 ft, hole caving, co.

TULARE COUNTY—Kenwood Pet. Corp.'s Kenwood 1, 14-24-27, lcn.

MONTEREY COUNTY—Shell's Branch 1, 34-24-10, dr black and brown shale 7063 ft.

SAN LUIS OBISPO COUNTY — Birch-Royer Oil Co.'s Patchell 1, 33-31-13, td 1453 ft, wocs 16-in 1440 ft (second time).

SANTA BARBARA COUNTY

CARPENTERIA—Santa Barbara O&G Co.'s Bryce 1, 29-4-25, dr brown shale 2048 ft.

LOMPOC—M. J. Freeman's La Brea 1, 11-7-33, dr brown shale 1450 ft. Lompoc Pet. Co.'s Beauterbough 2, 18-7-34, sd 3940 ft.

SUMMERLAND—Marmonte Oil Co.'s No. 1, 16-4-26, sd 1600 ft.

VENTURA COUNTY

BARDSDALE—Duke Oil Corp.'s No. 1, 7-3-19, dr gray sand 1400 ft. El Rancho Oil Co.'s Elkins 1, 9-3-19, sd 1082 ft. Union's Dryden 10, 12-3-20, td 5758 ft, wocs 8⅝-in 5250 ft (second time).

OJAI—Continental's Pirie 2, 14-4-23, dr red shale oil in fractures 908 ft.

OXNARD—General's McGrath 1, td 7635 ft, abn.

PADRE CANYON—Continental's Hobson 1, 15-3-24, td 482 ft, wocs 11¾-in at 4425 ft (second time).

PIRU—Bolsa Chica Oil Corp.'s Snow 3, 4-4-18, rur.

SANTA PAULA — High Mesa Oil Co.'s Butcher 1, 16-4-22, sd 650 ft.

SHIELLS CANYON — Bankline Oil Co.'s Calumet B-2, 3-3-19, dr sand and shale 2971 ft. Texas Co.'s Shiells 129, 4-3-19, rur.

SIMI—Dawson Oil Co.'s No. 1, 8-2-17, td 1910 ft, co. Jas. S. Hull's No. 1, 2-2-18, dr shale and sand 1490 ft. Paloma Oil Co.'s Paloma Marr 1, 12-2-18, sd 2806 ft.

SOUTH MOUNTAIN—Calco Pet. Corp.'s Calco 3, 17-3-20, rig.

VENTURA—Ventura Explor. Co.'s Sexton 1, 30-3-22, td 7068 ft, 8⅝-in cemented on bottom, wet.

SOUTHERN CALIFORNIA

ARTESIA—Vanco Dev. Co.'s Millard 1, 25-3-12, td 5818 ft, to deepen.

CARBON CANYON—Tehama Pet. Corp.'s Kramer 1, 33-2-8, td 3053 ft, plug 1450 ft, bailing.

DOMINGUEZ — West American Oil Co.'s Del Amo 1, 3-4-13, td 4040 ft, in sandy shale, surveying.

EAST MONTEBELLO—Wilshire Annex Oil Co.'s Baldwin C-1, 11-2-11, sd 4297 ft.

EL SEGUNGO—L. J. Marvin's Woods 1, 7-2-14, td 6359 ft, to dr deeper. Republic Pet. Corp.'s No. 2, 18-3-14, rig.

HUNTINGTON BEACH—20th Century Oil Co.'s Calnan 1, 36-5-11, td 5118 ft, rur to dr deeper.

KRAEMER—T. W. Cooke Dr. & Service Co.'s Cooke 1, 25-3-9, td 2657 ft, ran 3½-in liner including 264 ft perforated, to test on pump. Standard's Yorba Com. 1, 36-3-9, td 2714 ft, redr 2308 ft.

LAWNDALE — Sovereign Oil Co.'s Ben Long 1, 22-3-14, td 8766 ft, plug 8287 ft, ran liner, 566 ft of perforated, co and tested wet, recemented.

NEWHALL—Yant Pet. Corp.'s No. 5, 1-3-16, sd 1070 ft.

NEWPORT—Commander Oil Co.'s Mesa 1, 29-6-10, td 560 ft, co.

NO. LONG BEACH—Geo. L. Clayton's No. 1, 31-3-12, sd 6750 ft, will drop from report.

PICO—Frontier Oil Co.'s No. 1, 12-2-12, sd 5251 ft.

PICO CANYON—N. M. Fraser's No. 1, 31-4-16, dr sandy shale 954 ft.

PUENTE—No. American Oil Consolidated's Smith 3-1, 30-1-10, to be abn at 5952 ft. Chas. R. Butler's Butler 1, 14-2-10, dr sandy shale 1264 ft, carrying 12½-in.

REDONDO BEACH—Thos. R. Clark's No. 1, 6-4-14, td 3552 ft, ran 560 ft of 6⅝-in liner including 530 ft perforated, tested good for 135 bbls of 14.5 gravity oil, cut 7.5%. Imperial Pacific Dev. Co.'s Redondo Imp. 1, 6-4-14, rur.

SAUGUS — International Oil Developers' Powell 2, 34-5-16, sd 2198 ft.

TOPANGA CANYON—Monarch Pet. Co.'s Sylvia Park 1, dr 650 ft.

TORRANCE—Eyer Pet. Corp.'s No. 1, 20-4-13, td 2810 ft, fsh dr pipe. Oliver McDowell's No. 1, 35-3-14, dr hard shale 4349 ft. Pioneer Holding Co.'s Pioneer 1, 35-3-14, sd 4317 ft.

PLAYA DEL REY—Eastern Oil Co.'s del Rey 1, 22-2-15, to spud.

WEST LONG BEACH—Shell's Amebco 1, 13-4-13, dr gray sand 4834 ft.

WILMINGTON — McAdams Explor. Co.'s Palos Verde 1, 31-4-13, dr gray sand 3818 ft.

YORBA LINDA—Continental's Carlton Com 1, 21-3-9, rur.

RIVERSIDE COUNTY—Albert Pet. Co.'s Watt 2, 23-7-3, td 2785 ft, wocs 6⅝-in at 1800 ft.

COLORADO

ARCHULETA COUNTY—Wm. E. Hughes Estate Fee 4, se nw ne 24-33n-2e, co 132 ft.

BACA COUNTY—Robb, Morgan & Gross 1, nw nw nw 24-32s-48w, rotary equipment on lcn.

ELBERT COUNTY — Ramsey Petroleum Co., Union Pacific 1, center 13-8s-57w, fsg for tools at 5601 ft.

JEFFERSON COUNTY—Ruby Hill Oil Co., Braden 1, se se 24-4s-69w, sd 4385 ft.

LARIMER COUNTY—California Co. 1, se sw ne 6-11n-69w, dr 1170 ft, 15½ in csg cemented at 134 ft.

MORGAN COUNTY—Swisher et al Lunt 1, sw sw sw 3-3n-60w, ur 4¾ in csg at 1030 ft, td 1300 ft.

PARK COUNTY—South Park Oil Co., State 1, se se sw 16-11s-17w, csg stopped at 3650 ft, ur to bottom at 3730 ft.

FLORIDA

LAKE COUNTY—Oil Dev. Co. of Fla.'s Gulf Expl. Co. 1, se se 17-24s-25e, elev 120 ft, dr plug in 9⅝s in csg 2200 ft, blg with reported so, td 2258 ft, Argillaceous limestone.

KANSAS

BARTON COUNTY—Lario et al's Smith 1, sw nw nw 26-18s-13w, td 3364 ft, D & A. Witt et al's Murry 1, nw nw sw 14-17s-14w, dr 3280 ft. Torrey & Feaster et al's Kempler 1, se ne ne 31-18s-11w, dr 2975 ft. Yarnell, Carlson & Spencer's Bloomer 1, ne ne nw 36-17s-11w, spd. Hilligoss et al's Schmidt 1, ne ne ne 27-19s-11w, ru. Morgan & Flynn et al's Amerine 1, ne ne ne 14-19s-14w, woc 310 ft. Morgan & Flynn et al's Zimmer 1, se se sw 20-19s-14w, rig. John Burton's Wendel 1, ne ne ne 13-19s-11w, rig.

BUTLER COUNTY — Pryor & Lockhart's Boucher 1, nw nw nw 19-17s-4e, ru. National Ref. Co.'s McCullough 1, ne ne sw 1-25s-6e, dr 920 ft.

COWLEY COUNTY—Carey et al's Short 1, ne ne nw 6-32s-4e, td 3115 ft, D & A. Aylwasy, Trees Oil Co. et al's Shield 1, sw sw sw 17-32s-6e, co 1580 ft. Roth & Forout's Sherwood 1, ne nw sw 11-31s-4e, dr 1635 ft. Penwest's Clover 1, ne se se 8-31s-7e, dr 1365 ft. Reed & Milligan's Houston 1, nw nw sw 10-31s-4e, dr 1140 ft. Trees Oil Co.'s Garber 1, ne ne sw 28-31s-5e, ur 8-in csg 2055 ft. Shawver & Wilt's Baruth 1, sw nw ne 8-34s-3e, td 1893 ft, 5 M gas, comp.

ELLSWORTH COUNTY — Empire's Dolechek 1, sw sw sw 17-17s-7w, td 2957 ft, D & A.

GRAHAM COUNTY—Vickers Pet. Co. et al's Hutton 1, ne ne se 29-8s-22w, dr 1151 ft.

GREENWOOD COUNTY — Mohawk Oil Co.'s Edgar 1-A, ne ne sw 2-28s-8e, td 2548 ft, no test. Anderson & McGinnis' Jensen 1, se se sw 30-23s-12e, dr 465 ft. N. C. Dunn's Dawson 1, cnw ne 27-26s-13e, dr 800 ft. Sharpless et al's Cock 1, nw nw nw 15-24s-10e, spd & sd.

HARPER COUNTY—Marathon Oil Co.'s Zellers 1, csw nw 17-35s-8w, fsg 3940 ft.

HARVEY COUNTY—Ok-Tex et al's Osborne 1, cse se 6-23s-3w, sd 3626 ft. Empire O&R Co. & Ryan Drlg. Co.'s Webster 1, se se sw 8-24s-2w, ru.

KINGMAN COUNTY—Lauck et al's Skilling 1, se se sw 33-27s-8w, td 4496 ft, D & A.

NORTON COUNTY—Lario O&G Co. & Elwell's Kennedy 1, sw sw nw 22-3s-23w, dr 2395 ft. Helmerich & Payne et al's Collins 1, cne ¼ 11-3s-25w, rotary rig.

PRATT COUNTY—Skelly Oil Co. et al's Gilchrist 1, cse ¼ 7-28s-11w, pb 4265 ft, no test. Lario, Elwell & Atlantic's Lemon 1, se se nw 12-29s-13w, woc 904 ft.

RENO COUNTY—Foraker et al's Hiett 1, se sw ne 34-24s-4w (error last week), sd 1770 ft. Olson Drlg. Co. et al's Krantz 1, ne ne se 13-25s-5w, dr 3979 ft. McPherson Drlg. Co. & Derby Oil Co.'s Schuechzer 1, ne se sw 17-23s-4w, dr 2670 ft. Rose Spring Drlg. Co. & Foraker's Brauer 1, sw sw se 4-26s-4w, dr 3726 ft. Miller et al's Detter 1, ne se nw 28-22s-7w, mim. Darby Oil Co.'s Schrock 1, se se sw 27-24s-5w, td 3870 ft, rust.

RICE COUNTY—Permian Oil Co.'s Conner 1, cne ne 28-19s-7w, rng 6-in csg 3475 ft. Skiles et al's Edwards 1, nw nw ne 3-18s-8w, dr 3075 ft. Day's Mason 1, nw ne ne 26-21s-7w, td 3400 ft, 700 ft oih 5 hrs, no test. Wentz's Bushong 1, sw sw sw 30-21s-10w, td 3350 ft, D & A. Vernon O&G Co. & Cusco Oil Co.'s Boldt 1, nw sw nw 10-19s-10w, dr 1940 ft. Tabor-Coleman & Atlantic's Tharp 1, cnw nw 33-21s-6w, fsg 3236 ft. Permian Oil Co.'s Monroe 1, cne ne 9-20s-7w, sd 1110 ft. Witt's Hall 1, se se nw 3-20s-9w, spd & sd. Gratton et al's Williams 1, sw sw nw 17-18s-7w, br. Franco-Central et al's Shonyo 1, sw sw ne 11-18s-10w, dr 90 ft.

ROOKS COUNTY—Gillespie & Son's Low 1, ne ne nw 12-6s-18w, rng 6⅝-in csg 3037 ft. Murfin et al's Wasthusin 1, ne ne se 12-6s-18w, dr 235 ft. Pryor & Lockhart's Bradley 1, sw sw ne 31-10s-16w, dr 556 ft.

RUSH COUNTY—Torrey & Feaster et al's Winget 1, se se se 15-16s-16w, rig.

RUSSELL COUNTY—Phillips Pet. Co. & Sinclair Prairie Oil Co.'s Driscoll 1, nw nw se 31-15s-11w, rust 3041 ft. Coraleana Oil Co.'s Diskon 1, se se se 30-15s-13w, dr 2310 ft. Warren Pet. Co.'s Bratton 1, se se se 25-11s-13w, dr 2450 ft. Central Pet. Co.'s Benso 1, se se sw 9-14s-15w, dr 1485 ft. Berry et al's Cook 1, ne ne ne 19-11s-13w, rig. Sam Murphy et al's Enochutz 1, sw sw sw 10-15s-13w, fsg 2500 ft. Hartman & Blair's McAllister 1, sw sw se 24-13s-15w, mim. Hartman & Blair's Boxberger "B" 1, ne se sw 5-14s-14w, ru. Eisenhour & Shaffer's Humes 1, sw sw sw 6-14s-12w, lcn. R. C. Tarrant's Williamson 1, se se nw 9-14s-14w, co at 875 ft.

SEDGWICK COUNTY — T. C. Johnson's Jensen 1, sw sw nw 11-28s-2e, lcn.

STAFFORD COUNTY—Herndon Drlg. Co. et al's Russell 1, cse nw 20-21s-14w, dr 3660 ft. Farris et al's Snyder 1, se se nw 3-21s-11w, rng 20-in csg 135 ft.

SUMNER COUNTY—Pulse's Buss 1, nw nw nw 12-32s-2e, dr 3275 ft. Orcutt & Stewart's Newton 1, se se se 21-30s-2e, sd 475 ft. Helmerich-Payne's Wright 1, se se nw 10-33s-2e, dr 3195 ft. Husted et al's Evers 1, se se ne 27-31s-2e, spd & sd. Morgan et al's Veail 1, se sw ne 27-32s-2e, dr 40 ft.

TREGO COUNTY—Vickers Pet. Co. et al's Secor 1, nw nw nw 25-15s-24w, ur 5-in csg 4630 ft. Central Commercial's Wagg 1, nw nw se 17-13s-21w, sd 3270 ft.

WOODSON COUNTY—Morgan et al's Vermont Savings Bank 1, ne nw ne 15-25s-14e, dr 400 ft. Sheedy et al's Warner 2, sw sw sw 21-25s-14e, spd.

SOUTH LOUISIANA

ACADIA PARISH — Woodley Petroleum Company & Superior Oil Producing Co.'s Adams Smith 2, Bayou Mallett, sec 47-7s-1e, lcn.

CAMERON PARISH—Pan American Production Co.'s Lutcher Moore 1, Mud Lake prospect, sec 14s-11w, dr lime 8845 ft. Magnolia's Miama Corp. 1, Willow Lake, sec 32-12s-8w, dk foundation.

EVANGELINE PARISH—Basile Oil Co.'s Haas Est. 1, se of Hampton, sec 14-6s-2w, dr shale 6850 ft.

IBERIA PARISH—Jefferson Lake Oil Co.'s Lake Pegneur 274, Jefferson Island dome, 12s-5e, pulling screen and liner, will take another core at 8464 ft, and make drill stem test.

JEFFERSON DAVIS PARISH — J. K. Lewis's Lock Moore 1, Heckner prospect, sec 32-7s-6w, washing over drill pipe at 5510 ft. Shell's Lacassine Co. 1, Hayes prospect, sec 20-11s-5w, coring sand and shale at 8634 ft.

ST. MARTIN PARISH — Shell's Colonial Sugar Inc. 1, Convent prospect, sec 5-12s-5e, mim.

ST. MARTIN PARISH—Texas Co.'s Lake Mengouloi 1, Lake Mengouloi prospect, sec 10-9s-9e, sd for repairs at 7462 ft. Texas Co.'s St. Martin Land Co. 1, Henderson prospect, sec 9-8s-7e, dr clay 60 ft.

TERREBONNE PARISH — Shell's Realty Co. 1, Houma Townsite prospect, sec 103-17s-17e, dr sand no shows 7818 ft.

VERNON PARISH — Llano Oil Corp.'s Llano 1, sec 7-1n-9w, dr shale 2331 ft.

NORTH LOUISIANA

BIENVILLE PARISH—DeSoto O&G Co.'s Mcwer 1, ne ne 9-16n-10w, rur. Lide & Greer's Davis Lbr. Co. 1, ne se 12-16n-5w, 16-in csg 500 ft, cemtd 10¾ in csg 2331 ft, wocs, td 2600 ft. Texas Seaboard Oil Co.'s McGee 1, sw ne 3-16n-6w, wocs surf csg.

BOSSIER PARISH—McKinney & Humphrey's Bulkley 1, 36-21n-13w, coring 1214 ft. Producers O&G Co.'s Pettit 1, ne sw 17-17n-11w, elev 198 ft, top chalk 1104 ft, 9⅝ in csg 4050 ft, claim 14 ft saturated lime, arr set 7-in csg, td 5260 ft.

CALDWELL PARISH—Critchett & Wood's Kyle 2, 18-11n-3e, arr test reported so 1290 ft. G. W. Zeigen's La. Cent. Lbr. Co. 2, 19-14n-3e, dr 900 ft.

CLAIBORNE PARISH—E. T. Oakes et al's Patton Est. 1, ne ne 1-20n-5w, elev 357.3 ft, arr core 4238 ft. Ryan Oil Corp.'s Gladney 1, ne sw 27-20n-7w, elev 343 ft, top anhydrite 4485 ft, dr 4820 ft anhydrite. Sugar Creek Synd.'s Darrett 2, 31-21n-5w, sr to set 10-in csg, td 5050 ft (9000 ft test).

DE SOTO PARISH—Alexander et al's Stell 1, 5-12n-16w, dr 4402 ft hd lime and shale. E. B. Bird's Bagley 1, ne sw 20-14n-16w, lcn. A. G. Halbach, Tr.'s Staten 1, se se 32-13n-14w, core 2815 ft. Jerry Ryan's Jackson 1, sw sw 1-11n-14w, sd 312 ft. M. L. Stephens et al's Alston 1, ne sw 11-11n-16w, wosr, td 2055 ft.

JACKSON PARISH—Caldwell L&T Co.'s Burroughs Est. 1, ne nw 1-17n-1w, rur, G. W. Zeigen's La. Cent. Lbr. Co. 3, 26-14n-1w, lcn.

LINCOLN PARISH—Caldwell L&T Co.'s Hammons 1, nw ne nw 30-18n-1w, rur. Lide & Greer's T. L. James Co. 1, 9-17n-4w, rur. S. Gardner 1, 10-17n-4w, rur. Eastern Texas Prod. Co.'s Givens 1, 2-17n-4w, owdd, td 3505 ft.

OUACHITA PARISH—J. B. Williams et al's J. C. Lipscomb 1, se nw 7-16n-4e, ru and sd. Gus Primo's Arent 1, 8-17n-4e, lcn.

RICHLAND PARISH—Morissey & Co.'s Jones 1, se nw 15-18n-7e, 10-in csg 176 ft. Arthur H. Wray's Slocum 1, 10-17n-6e, 12-in csg 136 ft.

SABINE PARISH—Claude H. Smith et al's Whitney Corp. 1, nw ne ne 19-10n-13w, sd 750 ft.

WEBSTER PARISH—Ohio Oil Co.'s R. L. Holloway 6, ne sw 23-21n-10w, 15¾ in csg 560 ft, dr 4295 ft. J. L. Edwards' Hooper 1, nw sw 8-17n-9w, sd 755 ft. Red Hawk Oil Co.'s Mayfield 1, 9-23n-9w, rog.

WINN PARISH—P. E. Parsons et al's Tremont Lbr. Co. 1, nw sw 10-12n-2w, co to deepen 1120 ft.

MICHIGAN

ANTRIM COUNTY—McClanahan Oil Co.'s Pearson 1, 31n-5w-4, ur 1200 ft.

CLARE COUNTY—Fred Siegle's Fee 1, 17n-5w-26, rig. Sun Oil Co.'s Woodward 1, 19n-3w-24, dr 4100 ft.

EATON COUNTY—Burris & Keeler's Moon 1, 2n-4w, c se sw-11, mim.

GLADWIN COUNTY—United Producer's Nettleton 1, 17n-2e-24, sd 3448 ft.

GRATIOT COUNTY—Herbert Snell's Howe 1, 10n-2w-19, sd 3000 ft. Mountain Oil & Gas Co.'s Walters 1, 11n-2w-17, dr 200 ft. Harvey William's Smith 1, 9n-2w-29, rig. Miller Bros.' Ryan 1, 9n-1w-22, sd 2370 ft.

HURON COUNTY—Wallace Markle's Opaka 1, 13n-11e-4, fsg 2700 ft.

IONIA COUNTY—Wittmer Oil Co.'s Kimball 1, 7n-5w-15, dr 1500 ft. Associated Petroleum's Retensdorf 1, 7n-8w-8, dr 600 ft.

KENT COUNTY—Rex Oil Co.'s Johnson 1, 10n-12w-36, dr 500 ft. James Barton's Smith 1, 10n-10w-29, sd 600 ft.

LAKE COUNTY—C. W. Teater's McCabe 1, 20n-12w-26, sd 800 ft. Frank Lyon's Alderton 1, 17n-13w-33, sd 2450 ft.

LENAWEE COUNTY — Socony-Vacuum's McCarbery 1, 5s-5e-3●, sd 2500 ft. Mott and Denman's Huffman 1, 6s-6e-26, dr 125 ft.

MASON COUNTY—Max Prey's Barothy 1, 17n-13w-29, dr 1800 ft. Dragoon Dev.'s Young 1, 17n-15w-15, sd 2400 ft.

MIDLAND COUNTY — J. V. Wicklund's Roher 1, 16n-1w-7, mim.

OSCEOLA COUNTY—L. B. Ayre's Bertz 1, 18n-7w-21, sd 3450 ft.

SAGINAW COUNTY — Mid-State Dev.'s Burlson 1, 10n-5e-21, rig. Henry McEvoy's Jenacki 1, 12n-2w, se se nw-31, rig.

TUSCOLA COUNTY — Smith Petroleum Co.'s Boyce 1, 14n-7e-24, sd 2830 ft, so 2700-25, 2790-85 ft., will acidize.

MISSISSIPPI

LAMAR COUNTY—Snow-Black Pet. Co.'s Miller et al 1, ne ne sw 3-4n-15w, dk.

WARREN COUNTY—Harry W. Elliott's R. L. Parker 3, 14-14n-1e, cemtd 6⅝ in csg 3105 ft, wocs, td 3110 ft.

WILKINSON COUNTY—Chas. Green, Tr.'s Foster Creek Lbr. Co. 1, c se 8-3n-1e, spd, dr 850 ft.

WINSTON COUNTY—Jack Vale's Moody 1, sw nw sw 3-13n-14e, sd repr pump, td 2652 ft, red gumbo.

MONTANA

CARBON COUNTY—Bailey Round Butte Oil Co., 1, ne se 3-6s-22e, fsg at 1551 ft.

FERGUS COUNTY—Judith Operating Co., csw sw 26-22n-17e, dr 1068 ft.

GALATIN COUNTY—Montana Gas & Petroleum Co. Tice 1, ne ne ne 28-1n-2w, dr 2700 ft.

PONDERA COUNTY—Texas Co. 1 Unit-2, cnw 21-30n-5w, dr 2830 ft.

ROSEBUD COUNTY—Birney Oil & Gas Co. Birney 1, sw sw sw 6-6s-42e, sd 545 ft.

NEW MEXICO

EDDY COUNTY—Repollo Oil Co., McIntyre 1, se sw se 17-17s-30e, sd 3260 ft to run acid. Etz Bros. State 1, cse sw 16-17s-30e, sd waiting on results from acid at 3320 ft. D. & B. Oil Co., Jenkins 1, nw sw nw 20-17s-30e, dr 1540 ft. Red Lake Oil Co., State 6, cne ne sw 22-17s-28e, lcn. Barnsdall Oil Co., Dodd 3, cse ne 22-17s-29e, dr 2120 ft anhydrite. Fred Brainards Featherstone 1, cel sw sw 35-16s-28e, sd 1580 ft. R. D. Compton, Brainard 7, sw se se 5-18s-27e, ur 8⅛ in csg to bottom at 1112 ft. Tignor, Etz and Keyes, Keyes 3-A, cne nw 10-17s-28e, dr 560 ft. Emperor Oil Co., Puckett 2, cnw ne 24-17s-31e pb 3450 ft and waiting on cement to set.

SAN JUAN COUNTY—Continental Oil Co., Tribal 49, sw ne ne 2-29n-19w, mim. Jack Amenda 3, sw nw sw 25-30n-12w, running 6⅝ in csg to 800 ft.

LEA COUNTY—Barnsdall Oil Co. et al's D. C. Hardy 1, c se ne 29-21s-37e, elev 3470 ft, dr 1250 ft. Amerada's State 1-K, c se nw 29-19s-37e, rig. Amon G. Carter and Crafton Oil Co.'s M. A. Hair-Humble 1, c sw nw 11-24s-37e, elev 3231 ft, top anhydrite 990 ft, top salt 1200 ft, dr 1410 ft. Gypsy Oil Co.'s Annie L. Christmas 1, c se se 27-22s-36e, elev 3521 ft, rig. Maljamar O&G Corp.'s Baish 6, c nw se 21-17s-32e, Maljamar area, mim. Ohio Oil Co.'s State 1, c sw se 30-19s-37e, Monument area, lcn. N. G. Penrose, Rowan Drl. Co. and J. M. Rush's Will Cary-Humble 1, c nw sw 22-22s-37e, elev 3353 ft, complete 200 bbls daily via tubing, td 3555 ft. Repollo Oil Co.'s J. R. Phillips 1, swc 31-19s-37e, Monument area, elev 3585 ft, sg 3102 ft, dr 3155 ft; J. H. Williams 1, nec 33-19s-37e, Monument area, elev 3587 ft,

base salt 2530 ft, dr 3440 ft. Skelly Oil Co.'s W. H. King 1, c ne sw 6-23s-37e, elev 3382 ft, dr 3400 ft; B. L. King 1, c sw se 32-22s-37e, lcn; Hugh O. Simms 1, c sw ne 4-23s-37e, elev 3323 ft, sd repairs, td 2817 ft; Edgar L. Steeler 1, c nw ne 17-23s-37e, elev 3333 ft, dr 3000 ft. Skelly Oil Co. et al's B. F. Harrison 1, c nw sw 5-23s-37e, elev 3352 ft, top anhydrite 1190 ft, top salt 1280 ft, top sandy-lime pay 3663 ft, pb fro hfw 3796 ft to 3762 ft, shot 870 qts nitro 3490-3760 ft, co and testing. The Texas Co.'s J. M. Dean-Pure 1, c se sw 28-22s-36e, elev 3498 ft, top anhydrite 1330 ft, cored oil saturation in lime and sandy-lime 3640-3810 ft, used 4000 gals acid, tested dry, used 6000 gals acid, swabbing; H. T. Mattern 1, c nw sw 20-19s-37e, elev 3647 ft, Monument area, used 10,000 gals acid (3 treatments) at 3949 ft, small well, dd to 3965 ft, used 2000 gals acid, complete swabs 370 bbls daily. Warren L. Todd, Inc's Lemon 1, c nw se 17-21s-32e, mim. Sam K. Vierson & Brown's W. D. Robinson 1, c nw se 14-11s-32e, elev 4355 ft, top anhydrite 1474 ft, top salt 1506 ft, top brown lime 3465 ft, cem 7-in cas 3680 ft, tested sulphur w in lime 4139 ft, dr 4170 ft.

OKLAHOMA

ALFALFA COUNTY—Tex-O-Kan's Acre 1, csw ne 14-24n-11w, dr 6935 ft.

ATOKA COUNTY—Vierson et al's Williams 1, ne sw nw 34-2s-10e, dr 3450 ft. Pierce's Aetna Life Ins. 1-A, nw sw ne 10-1n-13w, dr 3860 ft.

BEAVER COUNTY—Anderson-Kerr et al's Davis 1, csw se 36-5n-26 ECM, td 5781 ft, tools stuck at 5765 ft.

BECKHAM COUNTY—Benonine Oil Co.'s Smith 1, sw sw sw 17-8n-23w, dr 1830 ft. Speed & Barker's Stephens 1, sw sw nw 19-9n-22w, rog.

CADDO COUNTY—Denver P&R Co.'s Sah-Cam 1, cse se 33-10n-10w, dr 9310 ft. Turner et al's Sapin 1, ne ne sw 1-5n-11w, dr 3440 ft.

CARTER COUNTY — The Texas Co.'s Cathey 1, se ne ne 6-5s-1w, dr 3888 ft. Carter Oil Co.'s Humble-Williams 1, sw ne sw 27-2s-3w, string going by dr pipe 7060 ft. Hutchins' Moore 1, ne se nw 30-4s-1w, slush pits. Schermerhorn Oil Co.'s Floyd Clowdus 1, nw nw ne 2-4s-2w, lcn.

CLEVELAND COUNTY — Mid-Continent Pet. Corp.'s Butler 1, sw nw sw 7-3n-1e, sd 4750 ft.

COAL COUNTY—Carter Oil Co. et al's Thompson 1, csl ne nw 34-2n-9e, dr 6749 ft. Southern Oil Co.'s Fish 1, sw sw sw 6-1s-8e, rng 8-in csg 1188 ft. Shell Pet. Corp.'s Hill 3, se se nw 30-3n-10e, spd.

COMANCHE COUNTY—George Pace et al's Spencer 1, sw sw sw 21-3n-10w, td 4164 ft, pb 3210 ft, to test. John Nicholas' Hauseholder 1, ne ne sw 8-2n-10w, td 959 ft, rng pipe to test.

COTTON COUNTY—Grace & Woods' Alva Henderson 1, ne se se 27-4n-11w, dr 1388 ft.

CREEK COUNTY—Summitt Drlg. Co. et al's Stone 1, sw se nw 12-14n-7e, td 3866 ft.

GARFIELD COUNTY — Sherry et al's Hoken 1, nw nw sw 32-20n-4w, rur.

GARVIN COUNTY—Orbit Oil Co.'s Federal Bank Land 1-A, se sw sw 10-4n-3e, pb 1830 ft, D & A. Suggett & McElreath's Hyre 1, ne ne se 23-3n-1w, rur.

GRANT COUNTY—Southern Oil Co. et al's Allen 1, sw sw se 36-26n-4w, sd 5202 ft.

HUGHES COUNTY—Schumacher et al's Schumacher 1, ne nw ne 23-5n-10e, sd 875 ft. Halsey's Eastep 1, nw nw sw 11-8n-9e, cored 2867 to 2876 ft.

JACKSON COUNTY—Universal Oil Co.'s Briscoe 1, nw sw ne 36-1s-20w, dr 100 ft. Jackman's Fee 1, sw sw sw 27-1s-24w, sd 280 ft.

JEFFERSON COUNTY—Twin State Oil Co.'s Bassett 1, nw sw sw 16-5s-7w, td 3895 ft, D & A. Heydrick's Seay 1, se nw nw 31-6s-5w, dr 1737 ft. Sinclair Prairie Oil Co.'s Barrett 1, nw nw nw 31-5s-6w, rig. Geo. Pace's Gardner 1, sw sw sw 23-5s-5w, sd 600 ft. Campbell's Trout 1, se ne ne 6-8s-7e, dr 105 ft.

JOHNSON COUNTY—Equitable O&G Co.'s Bellsey 1, ne ne sw 12-2s-4e, dr 1936 ft. Moore & Wirick's Westheimer & Daube 1, se nw ne 19-3s-4e, set 10-in csg 1925 ft & sd.

KAY COUNTY—Helmerich & Payne's Rath 1, sw sw sw 8-28n-2w, td 4799 ft, D & A. Black Gold Pet. Co.'s Cooley 1, ne nw sw 25-28n-4e, spd.

KIOWA COUNTY—Beeler & Klein's Van-Kirk 1, ne ne sw 35-7n-15w, sd 607 ft. Burns & Moore's Webster 1, cne ne 2-6n-17w, sd 33 ft.

LEFLORE COUNTY—McGraw et al's Tidwell 1, cnw se 17-3n-22e, dr 1120 ft.

LINCOLN COUNTY — The Texas Co.'s Vanderpool 1, nw sw se 11-16n-3e, td 4248 ft, mir. Stanolind-Amerada's Crawford 1, ne ne se 35-15n-2e, td 5229 ft, wocs. The Texas Co.'s Andrew 1, nw ne se 28-14n-5e, td 3575 ft, rust.

LOGAN COUNTY — Stanolind-Amerada & Eason's Gragg 1, sw sw ne 20-18n-4w, dr 5520 ft. Spring Rose Drlg. Co. et al's Wright 1, sw sw nw 32-15n-1e, dr 4705 ft.

LOVE COUNTY—Sinclair Prairie Oil Co.'s Stockton 1, se se sw 26-6s-2w, cutting 5100 ft. Amerada & Stanolind's Westheimer & Daube 1, sw se sw 27-6s-2w, dr 4325 ft.

MARSHALL COUNTY—Singley's Vickers 1, nw sw nw 22-7s-4e, dr 200 ft. Singley et al's Halford 1, sw se sw sw 22-7s-4e, dr 230 ft.

McCLAIN COUNTY — Arab Pet. Corp.'s Autry 1, nw nw nw 16-7n-3w, sd 5176 ft.

McINTOSH COUNTY—I.T.I.O. Co.'s Toncred 1, sw sw ne 9-9n-14e, td 2727 ft, dr ahead.

MURRAY COUNTY—Hernsby & Jones' Sadler 1, ne ne nw 20-1n-2e, dr 1580 ft.

OKFUSKEE COUNTY—Sunray's Culla 1, ne sw ne 13-12n-8e, td 4194 ft, reacidized with 2000 gals and prod 355 bbls oil. Sherry's Washington 1, sw sw ne 21-13n-7e, ph 4130 ft, rust. Geo. Manahan & W. D. Grisso's Dalton 1, se se se 36-10n-8e, lcn.

OKLAHOMA COUNTY — Sinclair Prairie Oil Co.'s Corbett 1, ne nw ne 17-13n-3w, dr 5530 ft. Mid-Continent Pet. Corp.'s Dahl 1, ne ne nw 8-13n-3w, dr 6080 ft. Sinclair Prairie Oil Co. & Slick-Urschel's Heavey 1, ne ne nw 19-13n-3w, dr 5011 ft.

PONTOTOC COUNTY—Gypsy Oil Co.'s Emry 1, sw sw ne 15-2n-6e, dr 5502 ft. Delaney et al's Hillsdale 1, se se ne 35-4n-6e, dr 1190 ft. Patsy Oil Co.'s Magnuson 1, sw se se 23-2n-7e, dr 2485 ft.

POTTAWATOMIE COUNTY — Magnolia Pet. Co.'s Devault 1, sw nw se 22-6n-4e, mit.

ROGER MILLS COUNTY—Anderson & Kerr et al's Teeter 1, cse se 2-17n-25w, dr 5785 ft.

SEMINOLE COUNTY—Felmlee & Nichaelson's Belford 1, se nw ne 15-9n-8e, dr 1240 ft.

STEPHENS COUNTY — Summings' Aldridge 1-A, nw ne se 15-1s-4w, td 415 ft, 3 bbls oil, 1½ M gas comp. Clyde Rhodes et al's Doak 1-A, sw sw sw 1-1s-5w, mit.

TILLMAN COUNTY — Gypsy Oil Co.'s Schenck 1, se nw se 31-1s-16w, sd 2970 ft.

WASHITA COUNTY—McWhirter et al's Fee 1, sw sw sw 34-8n-19w, ur 65g-in csg 1347 ft.

WEST TEXAS

ANDREWS COUNTY—Fuhrman Petroleum Corp.'s W. T. Ford 3, near c se¼ sec 16, blk A-43, PSL sur, elev 3191 ft, top anhydrite 1708 ft, top salt 1725 ft, shot 500 qts nitro 4180-4478 ft, complete est. 12,000,000 ft gas with spray oil; W. H. Boner 3-B, nw¼ sec 25, blk A-43, PSL sur, lcn. Tom Sloan & Frank E. Lewis' Freund-Humble 1, sec 15, blk A-29, PSL sur, lcn. J. W. Tripplehorn et al's A. R. King 2, nec n½ nw¼ sec 11, blk A-46, PSL sur, dr 1575 ft.

BORDEN COUNTY — C. Ed. Hyde and Hugh White's W. L. Miller 1, c nw¼ sec 28, blk 33, T&P Ry. sur, T-4-N, dr 815 ft.

BREWSTER COUNTY—Floyd C. Dodson et al's Texas American Synd. 1, c ne ne sec 66, blk 10, GH&SA Ry. sur, deep test, elev 4228 ft, jkd 1715 ft. K. H. King & C. R. Franklin's A. S. Gage 1, nw¼ sec 138, blk B-22, GH&SA Ry. sur, elev 4244 ft, dry and abd 1617 ft. G. H. Storey et al's Jim P. Wilson 1, c se nw sec 3, blk 212, T&St. L. Ry. sur, sd 1875 ft.

CONCHO COUNTY—Maverick Oil Co.'s Jim Rice 1, sec 18, H&TC Ry. sur, elev 1887 ft, dr 910 ft. John W. Westbrook Co.'s C. C. Ledbetter 1, sec 2, A-1673, blk 65, H&TC Ry. sur, elev 2000 ft, dr 1745 ft.

CRANE COUNTY—Big Basin Pet. Co.'s Jax Cowden 1, nec nw ne sec 77, blk "X", sd 1340 ft. A. R. Eppenauer & A. H. Livingston's fee 1, sec 13, blk 6, H&TC Ry. sur, lcn. A. H. Flaherty et al's Ed. S. Hughes-Texas Co. 1, sec 4, GC&SF Ry. sur A-781, dr 1665 ft. Gulf's W. N. Waddell et al 1, c nw nw sec 4, blk B-27, PSL sur, elev 2554 ft, top salt 510 ft, top Simpson lime 5980 ft, top Ellenberger 6316 ft, tested sulphur w in Ellenberger lime at 6450 ft, pb to 6317 ft, shot 440 qts nitro 6186-6300 ft, co cavings and swabs 100 bbls oil daily. Humble's Tubb 1, c nw nw sec 11, blk B-27, PSL sur, dr 385 ft. Loffland Bros. et al's J. B. Tubb-Gulf 1, c nw¼ sec 9, blk B-27, PSL sur, elev 2540 ft, top anhydrite 428 ft, salt series 495-1285 ft, top brown lime 2478 ft, to dd from 4510 ft to Ordovician lime. John I. Moore et al's T. C. Barnsley 1, c sw sec 43, blk 32, PSL sur, lcn. Sinclair Prairie and unit members' J. B. Tubb-California Co. 1, SEc sec 3, blk B-27, PSL sur, sp and sd.

CROCKETT COUNTY—John I. Moore et al's A. C. Hoover 1, SEc sec 4, blk "FF", B&B sur, sp and sd. Dr. J. G. Harris et al's O. W. Parker 1, sec 83, blk 1, I&GN Ry. sur, elev 2215 ft, sd 1500 ft.

CULBERSON COUNTY — Anderson-Prichard Prod. Corp.'s H. A. Borders 1, nw¼ sec 34, blk 249, GB&CNG Ry. sur, elev 4565 ft, dr black lime 4225 ft.

JEFF DAVIS COUNTY — C. M. "Dad" Joiner et al's Jones-Coffield 1, ne¼ sec 8, blk 3, H&TC Ry. sur, testing so&g, td 2165 ft.

ECTOR COUNTY—Grafton Oil Co.'s E. F. Cowden 1, swc sec 19, blk 43, T&P Ry. sur, T-2-S, Harper area, elev 2995 ft, top anhydrite 1580 ft, salt series 1610-2670 ft, dr 3850 ft. W. H. Dunning et al's C. Scharbauer 1, sec sw¼ sec 33, blk 44, T&P Ry. sur, T-1-N, elev 3159 ft, top salt 1520 ft, top Yates sand 2655 ft, sg 3827 ft, pb from 3875 to 3835 ft acct crooked hole. Gulf's C. A. Goldsmith-Scharbauer 2, sec ne¼ sec 15, blk 44, T&P Ry. sur, T-1-S, elev 3100 ft, top anhydrite 1360 ft, salt series 1390-2475 ft, top Yates sand 2590 ft, fsh 3972 ft; Goldsmith-Scharbauer 3, SEc sec 22, blk 44, T-1-S, elev 3103 ft, dr 1045 ft. Phillips Pet. Co.-Pure Oil Co.'s E. F. Cowden 3, nw¼ sec 26, blk 44, T-1-S, T&P Ry. sur, dr 4140 ft. York & Harper, Inc.-Barnsdall Oil Co.'s E. F. Foster 1, c se se sec 13, blk 43, T&P Ry. Co. sur, T-2-S, elev 2932 ft, top anhydrite 1665 ft, top salt 1670 ft, top Yates sand 2830 ft, pb fr 4342 ft to 4310 ft, shot 370 qts nitro 4080-4300 ft, complete flowed 264 bbls daily.

EL PASO COUNTY—A. M. Blume et al's F. W. Cook 1, ne¼ sec 321, S. F. No. 8134, sd 560 ft. Tri-State Oil Co.'s Chas. & L. M. Kinkel 1, nec sec 237, S. F. No. 7232, dr 1675 ft.

FISHER COUNTY—L. A. Daniel & J. B. Rhoads' Mrs. J. R. Nickless 1, nwc 81-ac lse, G. W. Lawrence sur, elev 1912 ft, sd 685 ft. Forest Dev. Corp.'s A. M. Dry 1, c sw sec 108, blk 2, H&TC Ry. sur, dk. Tide Water-Merry Bros. & Perini, Inc.'s M. Howard 2, nec sw ne sec 180, blk 2, H&TC Ry. sur, elev 1853 ft, used 1000 gals acid in lime 3651 ft, pumped 50 bbls oil, dd to 3668 ft, used 1500 gals acid and flowed 21 bbls first hr; H. Newman 1, ne¼ sec 2½, John Rodman sur, elev 1997 ft, Noodle Creek lime (dry) 3280-3338 ft, hfw 3845-57 ft, dr 3965 ft.

GAINES COUNTY—E. M. Wahlenmaier-Yerk & Harper, Inc.'s E. H. Jones-Humble 1, c sw sw sec 414, blk "G", CCSD&RGNG Ry. sur, elev 3528 ft, top anhydrite 2171 ft, top salt 2290 ft, top lime 4300 ft, dr 4665 ft. Lou G. Stogner et al's W. H. Kirk 1, c ne se sec 22, blk A-21, PSL sur, lcn. W. T. Walsh & Harry Adams Corp.'s S. J. Averitt 1, nec ne ne sec 228, blk "G", W. T. Ry. sur, elev 3322 ft, top anhydrite 1969 ft, top salt 2030 ft, show gas 2785-95 ft, top Yates 2920 ft, fsh and making 3,000,000 ft gas, td 3142 ft.

GARZA COUNTY—Grisham-Hunter Corp.'s J. R. Sullivan 1, swc se¼ sec 3, blk 5, K. Aycock sur, elev 2493 ft, bailing 2915 ft. M. L. Richards et al's Post 1, nec se ne sec 6, blk 5, K. Aycock sur, dr 535 ft. Danciger Oil & Refineries, Inc.'s V. A. Hartman 1, sec 1401, blk 1, E. L. RR. sur A294, lcn.

GLASSCOCK COUNTY — Loffland Bros., John I. Moore et al's L. S. McDowell 1, c se ne sec 22, blk 34, T&P Ry. sur, T-2-S, elev 2534 ft, top lime 2137 ft, top Crinoidal lime 9471 ft, td 10,115 ft, used 6000 gals acid, flows by heads occasionally.

TOM GREEN COUNTY—Eugene Mays et al's Ike Funk 1, c nw sw sec 38, blk 5, H&TC Ry. sur, elev 2361 ft, so 1043-47 ft, pb from hfw 1454 ft to 1025 ft to use acid. Spinner Oil Co. (was Adkins Bros.') Bennett Reed 1, blk 39, Mayson-Perry sur, dr 980 ft.

HOWARD COUNTY—TP Coal & Oil Co.'s E. W. Douthitt 1, sec sw¼ sec 116, blk 29, W&NW Ry. sur, elev 2366 ft, top lime 1964 ft, dry and abd 3220 ft. Superior Oil Co.'s D. W. Logan 1, c nw se sec 34, blk 31, T&P Ry. sur, T-1-N, elev 2485 ft, top lime 2425 ft, top anhydrite 995 ft, top salt 1025 ft, dr 3000 ft.

HUDSPETH COUNTY—Hyman Krupp Oil & Land Co.'s Thaxton 1, sec 34, blk 74, T&P Ry. sur, Tsp. 6, dr 155 ft.

JONES COUNTY—Anderson and Richards' Ransom 1, sd 900 ft. Brown Eagle Oil Co.-Kleiner et al's Birt Fields 1, dry and abnd 2270 ft. Bob Elmore et al's O. L. Caton 1, sw¼ sec 10, D&DA Land sur, dr 400 ft. S. C. Herring and Hodges' Mrs. C. T. Cowsert 1, nwc sec 42, Orphan Asylum sur, dr 670 ft. Hal Hughes et al's R. D. Bumpass (70-ac) 1, T. Maltby sur, dr 845 ft. Tom B. Medders et al's J. E. Manley 1, near c se¼ sec 35, blk 14, T&P Ry. sur, dry and abnd 1705 ft. W. H. Peckham & Danciger Oil & Ref., Inc.'s Stamford 1, sec 207, BBB&C Ry. sur, elev 1605 ft, pumped 210 bbls oil, td 1937 ft. Reliance Oil & Roy. Co.'s Ida Crow 1, se¼ sec 9, D&D sur, dry and abnd 2147 ft.

LOVING COUNTY—Porter Rankin et al's W. D. Johnson 1, nw¼ sec 12, blk 57, T&P Ry. sur, Tsp. 1, elev 2904 ft, dr 2840 ft.

MARTIN COUNTY — Benedum & Trees (was Wm. Hix et al's) O. B. Holt 1 (5000-ac), League 319, Garza County School Land sur, mim.

MENARD COUNTY—Wilcox O&G Co.'s Lee Murchison 1, swc sec 158, Abst. 1840, elev 2190 ft, dr 325 ft.

MITCHELL COUNTY—Lockhart & Co.'s W. C. Berry 1, nec nw¼ sec 80, blk 97, H&TC Ry. sur, oil saturation in lime 1716-36 ft, elev 2232 ft, td 1802 ft, used acid, sd. Southern Union Gas Co.'s Costin 1, sec sec 11, blk 28, T&P Ry. sur, T-1-S, spd and sd.

NOLAN COUNTY—N. B. Hall, A. Glenn et al's Georgia Tech 1, sw¼ sec 89, blk 24,

T&P Ry. sur, elev 2330 ft, sd 200 ft. David Thomas, Ridgeway et al's Mrs. G. W. Cochran 1, ne¼ sec 113, blk 1, H&TC Ry. sur, mim.

PECOS COUNTY — Cardinal Oil Co.'s White-Baker (Gulf) 1, nec sec 43, blk "Z", HE&WT-TC Ry. sur, top salt 750 ft, dry and abd 1898 ft; White-Baker (Gulf) 1, sec 44, dr 215 ft. Dobbs Oil Co.'s J. M. Rooney 1, near ce ne ne sec 12, blk 125, T. & St. L. Ry. sur, mim. C. W. Richards et al's W. Courtney-Pryor 4, c nw nw sec 78, blk "OW", T. M. Ry. sur, sd 1126 ft. Shamrock O&G Co.'s J. L. Nutt-Phillips Pet. Co. 1, sec 12, blk 125, T. & St. L. Ry. sur, lcn. Tex-Mex Pet. Corp.'s E. T. Brandenburg 1, sec se n½ sec 42, blk 8, H&GN Ry. sur, dr 1740 ft. Trans-Texas Oil Co.'s C. M. Caldwell 1, sec sec 27, blk 50, T&P Ry. sur, Tsp. 9, so&g 3075 ft, top Deleware 5150 ft, cem 5 3/16-in cas 5156 ft, testing; F. W. Popham 1, sw¼ sec 235, blk 11, GH&SA Ry. sur, co 120 ft.

REAGAN COUNTY—Frank Oyster, R. R. Rhodes & Bahan's M. F. Reed 1, c nw¼ sec 31, blk 35, T&P Ry. sur, T-5-S, elev 2678 ft, top anhydrite 1325 ft, top salt 1345 ft, top Yates sand 1985 ft, base salt 1885 ft, top brown lime 3135 ft, top gray lime 3172 ft, dry and abd in sulphur w at 3550-3566 ft.

REEVES COUNTY—R. W. Clark & Washington Oil Co.'s Radford 1, sec 39, blk 56, PSL sur, elev 3169 ft, sd 502 ft. Grisham-Hunter Corp.'s TP Land Trust Co.-Kloh 1, c sw¼ sec 27, blk 57, T&P Ry. sur, Tst. 2, elev 3020 ft, top anhydrite 350 ft, top Deleware lime 2945 ft, top sand 2980 ft, best oil pay at 3215-3225 ft, dry and abd hfw 3350 ft.

RUNNELS COUNTY — Nelrose Oil Co.'s Mrs. L. P. Wood 1, W. Holmes sur No. 100, dr 2590 ft.

SCHLEICHER COUNTY—J. M. Cooper et al's Bert Page 1, near c nw¼ sec 40, blk "L", GH&SA sur, elev 2270 ft, pb from sul w 6257 ft to 5540 ft, used 3000 gals acid and increased gas to 13,800,000 ft daily, with spray oil and water. Cardinal Oil Co.'s J. A. Whitten 1, c ne nw sec 35, blk L, T. C. Ry. sur, rig. T. R. Henderson et al's fee 1, c nw¼ sec 21, blk L, GH&SA Ry. sur, lcn. W. C. Proctor, J. D. Wesner et al's Judkins-Spencer (Pure) 1-A, c sw¼ sec 4, GC&SF Ry. sur, blk V-28, or Hooper-Wade sur, blk "A", elev 2209 ft, sd for w, td 2220 ft.

SCURRY COUNTY — Coffield & Guthrie, Inc.'s W. A. Wade 1, nwc sec 115, blk 97, H&TC Ry. sur, elev 2306 ft, pb fr 3168 ft to 1900 ft and sd. Bristow & Cantrell's Shannon-Magnolia 1, c nw¼ sec 331, blk 97, H&TC Ry. sur, lcn. Guthrie et al's T. E. Sorrells 1, SEc sec 101, blk 97, H&TC Ry. sur, lcn

SUTTON COUNTY — Fleetborn Oil Co.-Mid-Continent Pet. Corp. & Paul Teas' G. S. Allison 1, swc sec 49, blk "A", GWT&P Ry. sur, elev 2316 ft, top Bend lime 3773 ft, top Ellenberger lime 4240 ft, dry and abd 4504 ft.

TAYLOR COUNTY—H. M. Imholz et al's Mrs. E. E. Sadler 1 (475-ac), sec 31, C. Cole sur, dr 1440 ft.

TERRY COUNTY — Danube Oil Corp.'s Brownfield 1, c se¼ sec 23, blk "T", D&W sur, lcn.

UPTON COUNTY — Greencliff Oil Corp. (John I. Moore et al's) J. H. Tippett-Halff 1, c ne¼ sec 58, blk Y, T. C. Ry. sur, dr 440 ft. J. G. McKenzie et al's W. H. & L. M. Taylor 1, sec ne se sec 22, blk B-2, GC&SF sur, sd 630 ft.

WINKLER COUNTY — Crafton Oil Co.-Showers & Moncrief's J. B. Walton-Pure 1, se¼ sec 2, blk B-3, PSL sur, elev 2951 ft, dr by drill pipe, td 3500 ft; Walton-Pure 2, swc ne¼ sec 1, blk B-3, lcn. Gulf's Keystone 3, nwc ne¼ sec 11, blk B-3, PSL sur, elev 2939 ft, top anhydrite 830 ft, pb fr 3745 to 3415 ft, shot 385 qts 3225-3410 ft, completed 63 bbls oil, 45 bbls water and 4,920,000 ft gas; Keystone 10, nec se¼ sec 10, blk B-3, PSL sur, elev 2954 ft, cem cas 3279 ft; Keystone 11, swc se¼ sec 10, blk B-3, PSL sur, top salt 1189 ft, dr 2590 ft; E. R. Hill 1, swc se¼ sec 9, blk B-11, PSL sur, dr 1350 ft. Wilson Keys & A. W. Cherry's Abilene Central State Bank-Conoco 1, nwc ne¼ sec 25, blk 26, PSL sur, mim. Magnolia's State-J. B. Walton 1, nec se¼ sec 7, blk B-3, PSL sur, 2921 ft, top anhydrite 735 ft, top lime 2309 ft, dr 2730 ft. K. D. Oil Co.'s Pink Mitchell 1, nwc s½ ne¼ sec 23, blk B-10, PSL sur, rig. Mascho Oil Co.'s R. M. Evans 1, near sec nw nw sec 46, blk 73, PSL sur, dr 625 ft; Cowden Cattle Co. 1, c nw¼ sec 8, blk A-56, PSL sur, mim. Tom Sloan, Frank E. Lewis et al's John Sealy 1, c se¼ sec 72, blk A, GMMB&A sur, lcn. for 7000-ft test. Sun Oil Co.'s Keystone 1, sec sec 3, blk 77, PSL sur, mim.

YOAKUM COUNTY—Honolulu Oil Corp.-C. J. "Red" Davidson's L. P. Bennett-TP Coal & Oil Co. 1, c ne ne sec 678, blk "D", John H. Gibson sur, elev 3557 ft, top anhydrite 2424 ft, top salt 2535 ft, top Yates sand 3220 ft, sd hfo, td 5090 ft. Lou Stogner & Taylor's Googins 1, sec 215, blk D, John H. Gibson sur, lcn.

SOUTH TEXAS

ATASCOSA COUNTY—R. C. Lee, Trustee (Atascosa Trust) U. A. Doumch 1, 152-acre tr, blk 10, J. T. Russell sur No. 1222, 3 miles N. Poteet, dr 1300 ft, brown sandy shale. R. McIntyre's San Antonio Joint Stock and Land Bank (H. A. Billinck) 1, J. B. Woodleff sur No. 246, 7½ mi e Coughran, sd 1015 ft.

BANDERA COUNTY — Palm Winn Oil Co.'s R. B. Watson 1, A. Curver sur No. 71, 2 mi n Medina City, abnd 2035 ft.

BASTROP COUNTY — A. W. Phillips' Vaughn Lumber Co. 1, 1110-ac tr, F. Sartuche sur No. 10, 5 mi ne Bastrop, set 1 joint 10-in sur csg, now sd 54 ft.

BEE COUNTY—Geo. M. Church's Webb-Hearn 1, in 92-ac lease, E. Ryan sur, 2000 ft se disc well Beeville field, td 5935 ft, cutting out drill stem; G. A. Ray 1, Anna Burk sur, 2 mi e Beeville, td 692 ft, prep re-dr. Luling O&G Co.'s B. B. Ruhmann 1-D, blk 22, J. M. Thurston sur, ab 313, 700 ft ne 1-A, dr 2565 ft. H. A. Pressey's R. T. Hicks 1, 1310 ft swl of 1120-ac tr and 150 ft wl of survey, Jose M. Uranga gr, ab 668, 4½ mi s of Normana, mim. G. M. Richardson et al's Mengers 1, center w 100-ac of W. R. Ryan 500-ac tr, Wm. Allen sur, near Tynan, dk. D. C. Smith's Willis A. Robertson 1, T. B. Barton sur, 1800 ft se discovery well, Plummer field, elev 393 ft, d.f., sand 3051-59 ft, set 4½ in liner to td, perf 3050-53 ft, dry and abnd, 3059 ft. Sun Oil Co.'s R. E. Borroum 1, Chas. Baker sur, w outpost Caesar field, sand 3085-92 ft, set 7 in csg 3085 ft, dr plugs, set liner and tubing.

BEXAR COUNTY — American Gas Co.'s Oliver No. 5, 400-ac tr, M. F. Rodriguez sur, Gas Ridge, sd 2996 ft. N. Anderson's Rudolph Vogt 2, 92-ac tr, Chas. Johnson sur, td 150 ft, sdy shale. A. J. Byrne's Herman Neumann 1, 138-ac tr, I. L. Munoz sur, No. 66, dr 650 ft. Carter & Ingersoll's Louis Mann 1, 60-ac tr, John Christopher sur, 3 mi s Von Ormy, td 520 ft, wait on 8½ in csg. Cherokee Drlg. Co.'s F. A. Chapman, 6 mi sw San Antonio, td 767 ft, ru new rotary. Joe Deupree's R. S. Coffey 1-A, F. Rodriguez sur, 7 mi s San Antonio, gas show 1061-62½ ft, set 5 3/16 in csg to 1059 ft, td 1065 ft, cement failed. recemented, dr plugs when bailer hung, fsh; Wm. H. Russell 1, 1500 ft ne Coffey 1-A, Rodriguez sur, 9 mi ne San Antonio, dr 957 ft. H. J. Moore's Mrs. Lean Eisenhauer 1, 1113 ft el, 507 ft nl of 80-ac tr in Gertrude Rodriguez sur, 9 mi ne of San Antonio, dr 203 ft, set 8¼ inch csg at 54 ft. Burt Mowinkle's Joe Kutzur 1, S. F. Longeville sur, e of S. A., sd 870 ft. O. M. Owensby's Minna Coreth 1, 284.04-ac tr, Adam Stafford sur No. 49, near Eckert field, dr 750 ft. H. A. Pagenkopf's Chas. Rittiman 1, 100-ac tr, J. Chappal sur, 12 mi ne San Antonio, near Kirby, dr 725 ft. H. B. Starkey's (was Joseph H. Parker) M. McCloskey 1, F. A. Desaque sur, 5 mi nw Somerset, sd 803 ft. F. M. Shaver's A. W. Bitter 1, J. M. Baerrera sur, near McDonna, td 881 ft, had additional sand and sandy shale, show oil, testing; A. W. Bitter 2, J. M. Baerrerra sur, partly ru and sd. Fred Thorman's Salm 1, Peter N. Hays sur No. 3, 2 mi s of Martinez, sd 50 ft. Jacob Wolff's August Kurz, F. Rolen League & Labor sur No. 48, Von Ormy townsite, comp, pumped 38 bbls oil per day.

BROOKS COUNTY—The California Co.'s B. Garcia 1, tr No. 3, Las Mestina de Gonzalina gr, Alta Mesa dist., coring 2582 ft. Dick Young et al's Singer 1, ne¼ se¼ sec 312, dr 400 ft.

BURLESON COUNTY — Walter Blumenthal's G. V. Crain 1, W. C. Pearce sur, ab 297, 1 mi from Milam County line, prep to sp.

CALDWELL COUNTY—Pat Armstrong et al's No. 1, N. Dunlap Est., 431-ac Farm in S. Seal sur, sd 21 ft. Detroit-Texas Dev. Co.'s W. P. Dunlap 3-A, S. F. Sanders sur, Dunlap area, dr 2035 ft, shale. J. J. Elam et al's Francis-Brown-Cochran 1, W. F. Young sur, 5 mi e of Luling, sd 27 ft. Exploration Dev. Co.'s (Fred Meyer) W. F. Eibaud 1, 57-ac tr S. Seal sur, Dunlap area, mim. Joe Graham's Martindale 1, e of Staples, dr 315 ft. W. C. Jenning's McMahon 1, James Pinchback sur, se of Lockhart, sd 150 ft. Marts & Beaven's J. J. Jolley 1, E. Pettus sur, midway between Lockhart & Lytton Springs, ru. McNeil Pet. Corp.'s C. A. Lackey 1, 1½ mi sw Dale, sp. Ogden & Reed Oil Co.'s C. L. Lackey 1, tr 193 (100-ac tr)Squire Damon sur, 3 mi ne Dale, top serpentine 1890 ft, sd 2275 ft. Fred G. Scott's E. P. Dunavent 1, 4 mi se San Marcos re-dr 100 ft. Sterling & Wilson's No. 1 M. L. Strawn, 747 ft se 1, 1247 ft swl of tr, Pablo Martinez sur, at Lytton Springs Townsite, mir. Sun Oil Co.'s J. W. Meiars 1, 49.5-ac tr in C. W. Swearingen sur, 2 mi s of N. Dale field, coring 1975 ft. M. R. Tinkle et al's Arnold 1, S. Seal sur, Dunlap, lcn. R. Y. Walker's Walker Bros. 2, S. Seal sur, td 2165 ft, 7 in csg 2036 ft, comp 65 bpd on pump.

CALHOUN COUNTY — Continental Oil Co.'s Am. Nat'l Realty Co. (Moody) 2-A (3) sec 6, blk C. P. Garcia sur, 9 mi se Seadrift, set 11¾ in csg 6424 ft, sd repair bit 6525 ft. Plymouth Oil Co. & Humble O&R Co.'s Mrs. E. Welder 1, Gardner Smith sur, ¼ mi w Heyser, N. Green Lake, ds stuck 5225 ft, pb 7 set whipstock; reconditioning hole.

CAMERON COUNTY—J. F. Anderson's Turfitt 1, blk 397, San Benito sub, Espiritu Santos gr, 3 mi ne Rio Hondo, sd 5194 ft. W. R. Daniels & King-Woods Oil Co.'s Port Isabel Co. 1, center lot 17, shares 29, 30 and 31, Buena Vista gr, 6 mi north Bayview, sp and sd, wor.

DE WITT COUNTY — Universal Oil & Glaspie's Schubel 1, C. Fitzgerald sur, abt 2 mi nw Yoakum, sd 425 ft.

DUVAL COUNTY — The California Co.'s Gruy Est. 2, sec 157, abt 1900 ft se No. 1, td 2617 ft, pb and perf 1859-89 ft, D&A. J. H. Chandler's Rita S. De Pena, Pena tr, sh 4, Mesquite gr, sand 2808-24 ft, sandy shale 2824-32 ft, oil odor, wait on csg, td 2832 ft. Continental Oil Co.'s Clara Driscoll Sevier 7-A, sec 52, Santa Rosalia grant, move in dk. Chas. Daubert et al's D. F. Kreis 1, sec 518, 6 mi e Loma Novia, ru. Frank J. Gravis et al's Gravis et al 1, sec 250, 9 mi w San Diego, dr 2235 ft. Howard Pet. Corp.'s G. Ruiz 1, sec 5, e of Loma Novia, 4000 ft test, lcn. Humble O&R Co. No. 1 L. & P. T. Wright, 330 ft sl and el of tr se¼ of sec 118, 1 mi n of Seven Sisters field, lcn. Magnolia Pet. Co.'s J. M. Bennett 1, 330 ft sl and el sec 434, abt 5 mi ne Cole field, ru; Duval Ranch 4, sec 100, sand 1954-65 ft, set 7 in csg 1954 ft, td 1965 ft, swabbing; Duval-Worden 1, sec 153, 3 mi w SR&C field, dry and abnd 3892 ft. Marzo Oil Co.'s E. R. Hagist 2, sec 269, 480 ft e No. 1 Hagist, Hagist area, coring for Cole 1270 ft. W. C. McBride, Inc.'s Hagist 1, 330 ft sl and wl blk 13, sec 267, ru. Rogers O&G Co.'s Cuellar 1, sec 117, sp and set sur csg; J. D. Sutherland 1, sec 120, Hoffman area, dst 2865-86 ft, show 400 ft mud, 350 ft oil, setting 7 in csg, Loma Novia sand 2863-85 ft, drlg plugs. Santa Clara Oil Prod. Co.'s (Atkins & O'Neil) J. F. Welder heirs 1-A, nw¼ of sec "A" out of sur 103, 6 mi e and 1 mi n of Freer, drlg 2638 ft, sand with slight oil odor 2515-2528 ft. Trinity Drillers et al's Clara Driscoll Sevier 1, Sweden Farm Lands, sec 68, Santa Rosalia gr, nw Driscoll field, sd 4002 ft, will abnd. Westheimer & Daube's Z. Campos 2, ne¼, sec 224, ½ mile east of Seven Sisters field, swabbing, td 2687 ft, show little oil, looks like small well.

EDWARDS COUNTY—Paul Teas' J. B. Stewart 1, 725 ft nl, 330 ft wl se¼, sec 2, GC&SF sur, 14 mi se Rock Springs, sd 789 ft.

FRIO COUNTY — Amerada Pet. Corp.'s Cory & McWilliams 1, block 13, Jose Arocha sur No. 298, 2¾ mi sw Smith 1, dr 1625 ft. W. D. Bacon et al's J. F. Burns 1, Thomas B. Clifton sur, sw Bigfoot, re-dr 2753 ft. Thornton Davis et al's Halff & Oppenheimer 1, J. D. Clare sur, No. 336, 1 mi w of Pearsall field, lcn.

GOLIAD COUNTY—Jane Oil Co.'s (Diamond Half Oil Co.) Gillett 1, J. Gomez sur, extreme western corner of county, near North Pettus field, ru. H. J. Porter et al's J. R. Kaufman 1, 40-ac lease, A. Trevino sur, 1000 ft e of Kaufman 1-C, Hords Creek, lcn. Thompson Drlg. Co.'s H. Taylor Est. 1, W. H. Smith sur, 6 mi n Goliad, sd 5301 ft, to set csg to td and perf between 4988-5023 ft. Zeni Oil Co.'s (was H. T. Potter et al) Lutenbacher 1, blk 25, Goliad Townsite sur, south of Goliad, dk.

GONZALES COUNTY—O. M. Owensby et al's (was Forrester Oil Co.) H. B. Steen 1, 1030 ft sel, 475 ft swl of tr in N. M. Bane sur, 12½ mi se Gonzales, and 100 ft fr road, coring 1135 ft. Tull et al's J. F. Bozka 1, 51.2-ac tr, B. McClure sur, s of Dilworth, sd 410 ft.

GUADALUPE COUNTY—Paul Armstrong's Clem Brodnaux 1, 36-ac tr, W. P. King sur, 2 mi ne Kingsbury, sd 710 ft shale. Eickenroth & Gallagher's O. H. Jahns 1, 150 ft el 450 ft nl of 840-ac tr, Green DeWitt sur, 3 mi sw South Darst Creek, Edwards lime test, lcn. O. W. Killam's J. Reneker 1, in G. Chatwell sur, 3 mi sw Staples, dr 910 ft. A. D. Locke's J. S. Slaughter 1, Cyrus Campbell sur, 1 mi nw Staples, dry and abnd; Holmes 1, 1 mi nw Staples, dr 410 ft. R. C. Robbins' Mrs. J. W. Manford 1, Manes James Hodges sur, No. 374, 1250 ft e Manford Pool, sd 2581 ft, will acidize. Fred G. Schott's F. P. Pooley 1, 2 mi s Staples, dr 100 ft. H. P. Suggs et al's J. H. Sherrill 1, 2 mi s Staples, dk, mir.

HIDALGO COUNTY—Gulf States Oil Co.'s Delta Orchards 1, lot 2, blk 73, Las Mestinas gr, 1 mi s Mestinas field disc well, sd 1675 ft, to move in new rig; J. C. Engelman 2, lot 3, blk 70, Las Mestinas gr, 500 ft e of Mestinas field disc well, ds stuck at 2000 ft, abnd 5777 ft. Kingwoods Oil Co.'s Osca Daskam 2, blk 30, Porc 45, 10 mi ne Mission, dk. Maddox & Tatum's John H. Shary 1, 330 ft sl and el of tr 48-2, Porc 53, Reynosa Juris (about 7 mi n and 1 mi w of city of Mission), 6000 foot test, sp. Maxwell-Mundy-Morris' Southland Dev. Co. (Hidalgo County Water Control & Impr. Dist.) 1, lot 11, blk 20, Alamo Land & Sugar Co. Subd, Alamo gr, 4 mi s Alamo, sd 735 ft. Bur-

ton McCollum's John C. Engelman 1, 3 miles south and 2 miles e of Gulf States' No. 1 Engelman, lcn. Dayle L. Smith Oil Co.'s Fairbanks & Young 1, blk 44, Porc 46, Reynosa Juris, 4 mi e Samfordyce field, coring 1318 ft. Union Sulphur Co.'s ARGL&I 7, tr No. 2309, blk 59, about 4000 ft e of Mercedes field, mim.

JACKSON COUNTY—L. A. Douglas et al's I. N. Mitchell Est. 1, 335-ac tr, Stephen F. Austin sur, 1 mi sw Lolita, dr 5405 ft.

JIM HOGG COUNTY—French Oil Corp.'s E. Rodriguez 1, sh m-1, Partition of Las Cuevitas gr, dr 1800 ft. S. L. Miller Oil Co.'s Yeager 1, blk 6, sur 20, td 3559 ft, dr 2910 ft in sdtr hole. P. H. Neilson, Trustee de la Garza 1, blk 293, Pippin sub, Randado gr, still sd 610 ft for water. G. C. Rankin's Vela 1, 330 ft nl and wl of blk 6, sec 5, dr 1865 ft.

JIM WELLS COUNTY—Houston Oil Co. et al's E. A. Hawkins et al 2, blk 11 Putnam sub, sh 3, San Diego gr, ½ mi n discovery well, San Diego field, dr 625 ft. M. T. Smith & Sons' J. C. McGill 1, N. Gusset sur No. 88, 660 ft s of Smith & Story No. 1 Dilworth gasser, Aramgosa dist, sd 2344 ft. J. E. Walsh's W. D. Wade 1, lot 3, blk 6, W. H. Bode sub, Sandia district, gas sand 2914-20 ft, 5 in csg 2920 ft, completing.

KARNES COUNTY — California Co. & Mills Bennett's J. R. MacDougal 1, 250 ft nel 190 ft sel of Wm. Guthrie sur, 3 mi e Runge, mim and digging pits.

KERR COUNTY—Auld & Evan's Heffner 1, sec 13, BS&F sur, ur 1100 ft. Eastland Oil Co.'s Jeff Love 7, 660 ft n and 150 ft e No. 1 Gant and Evans in J. Martinez sur, sec 1594, 640-ac tr, 6000 ft test, ru. Evans & Edmiston's Will Auld 1, 150 ft sl and midway between el and wl of 418-ac tr, sec 1592, 2500 ft sw Eastland No. 1 Love, move in spudder.

KIMBLE COUNTY — Forest Dev. Co.'s Stapp 1, sec 282, setting 8-in csg 3070 ft to cut off water.

KLEBERG COUNTY—John Bartlett's Anton Dietz 1, blk 16, sec 48, KI&T sur, 2 mi sw of Kingsville field, dr 3395 ft. Harry Clark's W. S. Rogers 1, lot 1, blk 36, Kleberg sur, sd 750 ft; J. W. Kellam 1, lot 5, sec 53, KT&I sub, 2 mi se Kingsville field, ru. Fidelity Explor Synd.'s Sam Michalk et al 1, lot 5, blk 37, KT&I sur, 5 mi se Kingsville, td 3109 ft, show sw 2602 ft in sdtr hole. Garland Gordan et al's Anton Dietz 1, blk 10, sec 56, 2 mi ne Recardo, dry and abnd 5018 ft.

LAVACA COUNTY—J. D. Aiguier et al's No. 1 A. A. Staffa, 2400 ft swl, 6400 ft sel, W. R. Henesy sur, 3 mi s of nl of county, lcn.

LEE COUNTY—Mills et al's Batey 1, W. Nichols sur, 14 mi nw of Lexington, top Edwards 3314 ft, coring 3317 ft.

LIVE OAK COUNTY—Earl Callaway et al's Moczygemba 1, lot 122, Geo. West sub, blk A, ab 113, S. L. Williams sur, td 3510 ft, broken sand 3473-81 ft, show little gas with mud, rainbow of oil on dst to 3481 ft, sandy shale and shell 3481-90 ft, hard sand cap 3490-95 ft, soft sw sand 3495-3510 ft, put on big bit and go ahead. Luray Oil Co.'s Little 1, M. M. Shipp sur, ne offset disc well in McNeill (North field), td 5296 ft, pb 5025 ft, perf above, completing show gas and some oil. Ogden & Reed's D. C. Reed 1, Clegg Ranch, sw part of county, ru. Santa Clara Oil Co.'s (Atkins & O'Neil) R. H. Corbett 1, Corbett sur center of sur) prep core ahead 2857 ft. L. W.. Stieren's W. A. Smith 1, corrected lcn 330 ft nl and wl of e¼ of 181-ac tr T. R. Reese sur, 6 mi ne Oakville, lcn.

MAVERICK COUNTY—Fulwood & Marr's State Bank & Trust Co. 1, GC&SF sur No. 3, 2 mi n of Eagle Pass, sd 770 ft. Thompson & Streeter's Joseph Wipff 1, sec 18, 7 mi w Chittim field, 10 mi n Eagle Pass, sd 220 ft.

McMULLEN COUNTY—F. Daybault's Matula 1, 100-ac, James Garner sur, 2½ mi sw Calliham, dr 520 ft. Chas. A. Hall et al's Lucy Claunch 1, 200-ac tr in M. Hely sur, ½ mi s Calliham field, td 1260 ft, setting 5 3/16 inch casing to 1000 ft, will perf and test gas sand 925-39 ft. Luray Oil Co.'s Glass 7, Gardner sur, Calliham area, sand 1035-40 ft, water broke in, recemented. E. J. Nelson's Fahler 1, Geo. Pittuck sur, sp and sd. V. G. Schimmel, Trustee's (Texas Pet. Co. & Texio Oil Co.) E. R. Hagist 1, G. B. Kinney sur, sec 481, ab 1147, ½ mi w Loma Alta field, dr 2200 ft, top Jackson 1590 ft. Stewart et al's Guy Lowe 1, Geo. Bright sur No. 21, 2½ mi sw Tilden, sd 2250 ft. Stella Tiechman's J. J. Henry 1, 575-ac tr, A. Torres sur No. 20, ab 457, 7 mi w Tilden, sd 370 ft. Ike W. Taylor's H. L. Lark 1, blk 56, Lark sub, E. W. B. Scrugham sur, between Calliham and Jacob field, lcn.

MEDINA COUNTY—Frank A. Brown's A. E. Brueks 1, John Ward sur, sd 700 ft; Mary R. Winn 1, John Ward sur, td 60 ft, set sur csg & sd. W. C. Campbell et al's (Ed Falvey et al) McMenemy 1, sur No. 331, G. Petty sur, 4 mi se Devine, top sand 2075, top Midway 1007, prep redr 2506 ft. Caroco Oil Co.'s R. Taylor 3, Brushet sur No. 135, dr 110 ft. Letro Oil Corp.'s F. B. Forest 1, sec 69, 1½ mi ne Ina field, 1½ mi Adams field, sand 990-97 ft, too tight, dr 1010 ft.

MILAM COUNTY — Minerva Ref. Co.'s Shelton Est. 4, 50-ac tr, Wm. Allen gr, Minerva-Rockdale area, lcn.

NUECES COUNTY — Bluff Pet. Corp.'s Bluntzer 1, sh 3, Bluntz land, Casa Blanco, 10 mi n Banquette, dry & abnd 6053 ft. Benson & Cargy's Clarkwood Townsite 1, center blk 1, Clarkwood Townsite, Saxet area, td 4408 ft, set 7-in csg at 4394 ft, sand 4400-08 ft, no test made. Garland Clymore's Jonas Weil 1, 330 ft wl, 350 ft nl 80-ac tr in Villareal sur, 1 mi se Saxet Heights. Masterson et al's Walt Eschberger 1, sec 3, Pauls subd, Driscoll Ranch, 5 mi s & w of Robstown, dr 5886, hard sand. Santa Clara Oil Co.'s (Atkins & O'Neil) Clara Driscoll field, td 3774 ft, set csg to td, perf 3739-74 ft, made oil, gas & salt water, recemented. Westgate Oil Co.'s Lynch et al 1, 150 ft nl, center e & wl's of 8.3-ac lse, running sur csg.

REFUGIO COUNTY — Texas Gulf Prod. Co.'s Carl Arnold 1, sec 33, Bonnie View sub, Wood Ranch, 9 mi se Woodsboro, sd 3300 ft. United Prod. Co.'s W. J. Fox 16, 182-ac tr, Hews & Brown sur, Fox area, td 5891 ft, set 7-in csg at 5885 ft, woc; M. F. Lambert 22, blk 22, C. A. Hardwick sur, coring 6190 ft.

SAN PATRICIO COUNTY—Argo Royalty Co. & Willis Storm's Nancy Hobbs 1-A, 215 ft nw No. 1 Delgado gr, 1 mi s Mathis, digging pits. Heep Oil Corp.'s E. H. Welder 11-E, sec 46, Welder Ranch sub, dry & abnd 6163 ft. Geo. E. Smith et al's J. L. Britton 2, 660 ft due e No. 1, blk 8, sec 5, Third addition Taft Farm Lands, set 400 ft sur csg. L. L. Smith's W. G. Thomas 1, lot 5, sec 6, Third add, Taft Farm Lands, ¾ mi e discovery well Taft field, lcn. Stanolind O&G Co.'s Alamo Iron Works 1, lot 17, Patrick Fitzsimmons sur, 3 mi sw Sinton, coring ahead 5362 ft, gas sand 5346-68, scft oil sand 5348-52, dst 5313-52, 25 thribbles salt water, small gas show and skim of oil, 15 min, dst 5343-52, 14 thribbles salt water, 10 min, cored sand 5352-62 ft.

STARR COUNTY—Ash & Tackett's R. E. Margo 1, blk 4, sh 3-B, porc 70, Juris of Mier, sd 378 ft. O. C. Borah et al's V. C. de Guerra 1, sh 92, porc 68, 2 mi n of Roma, fsh 125 ft. John H. Clopton's Kelsey Bass 1, center sec 357, 8 mi s of Cuevitas, set & cemented 10-in sur csg at 100 ft; Domingo Garza 1, sh 37-A, porc 80, 3400 ft nw Rio Grande City field, dry & abnd 1753 ft; Rcos & Bennett et al 3, blk 6, Clopton sub, porc 92, 1 mi n Rio Grande, 6 mi w Samfordyce, td 4003, ran Schlumberger, prep set 5-in csg 2650 & perf 2451-64 ft. Cook-Maris-Arnold's Starr County Cattle Co. 1, lot 24, porc 84, 2000 ft north of State Highway No. 4, sd 3813, wait on new machinery. Coreta Pet. Co.'s J. H. Burnett (Haden et al) 1, sh 47, porc 80, dr 900 ft. Griffin & Kimbrough's Guerra 1, sh 298, porc 69, north of Mier, prep to mim. Harter & Mayhew's Sanchez 3, 739 ft nl, 1112 ft wl sh 69, porc 72, n Roma, dr 390 ft. Marc Jenkins' Wm. Martin 1, sec 627, 13½ mi ne of Rio Grande City, dr 775 ft. Hiriam M. Reed's Starr County Cattle Co. 1, blk 6, Jeffries Lambeth subd, porc 89, td 3013 ft, sd 2542 in pb hole. Sun Oil Co.'s M. Guerra & Sons 10-A, 3860 ft swl, 4900 ft sel, Las Cuevitas gr, Cuevitas district, ru. A. F. Vannoy et al's (Marc Jenkins et al) H. Garza, Jr., 1, blk 10, sh 26, porc 70, nw of Roma, dr 775 ft. A. J. Weyel's Wardner 1, 431 ft sl, 244 ft el of 160-ac tr, porc 84, dr 1738 ft, sh. Otto W. Woods' H. P. Guerra 1, lot 35, Conroe subd, porc 55, Mier Juris, lcn.

TRAVIS COUNTY—Richey's Lungren 1, 330-ac tr in Kimbro sur, in blk 14, sd 407 ft.

VICTORIA COUNTY—Heep Oil Corp.'s J. J. Welder 1, Phillip Graves sur, near Nursery, dr gas well for fuel. S. C. Yingling's Jacob Stehle 1, 330 ft se land nel of 157-ac tr, P. Gallardo sur, ab 32, 1 mi sw of Coleto Creek field, dk.

WEBB COUNTY—Mills Bennett's C. Garcia 1, 330 ft sl & el of s 1/3 of w½ sur 709, ru. California Co. & Mills Bennett's W. C. Billings 1, sec 45, 3 mi n Carolina-Texas field, dry & abnd 3406 ft D. E. C. Oil Co.'s Slator Ranch 1, blk 29, Mission Oil Co. subd, Slator Ranch, J. S. Borrego gr, sd 2624 ft. O. W. Killam's Ortiz Ranch 1-A, 50 ft n No. 1, porc 17, 6 mi nw Laredo, dr 1906 ft; Ortiz Ranch 2, sec 1805, 14 mi ne Laredo, dr 2035 ft. Payne & Martinez's Mrs. M. P. Perry 1, sur 771, lcn. Holland S. Reavis' C. H. Webster 1, nw ne sec 684, 1 mi e Carolina-Texas field, dr 2335 ft. S. S. & B. Oil Co.'s Lone Star Construction Co. 9, porc 12, ½ mi nw of Laredo,

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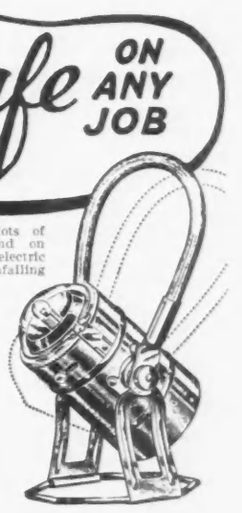

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sd 1010 ft. Superior Oil Co.'s A. S. Billings 1, sec 7, 1 mi w Lopez field, sp. W. H. Vernor Tr.'s Jefferies Ranch 1, blk 13, sec 1453, 30 mi nw Laredo, dr 675 ft.

WILLIAMSON COUNTY—Glass Bros.' A. Albert 1, P. Coursey sur, sd 785 ft. H. F. Goff's Chas Patschke 1, 100-ac tr in Foley sur, sd 255 ft. S. W. Graham's Pfluger 2, J. Jordan sur, sd 1040 ft. Rule et al's Bochmeyer (Rummell) R. Cartwright's sur sd 800 ft. G. A. Ripley 1-A A. Muery, (2nd hole) sd 1010 ft, shale.

WILSON COUNTY—Comet Oil Co.'s Jim McDaniel 1, 343-ac tr in Conception Botello sur, 4 mi Poth, sp & sd. A. G. Reimenschneider's Lon Harrell 1, 209-ac tr in Manuel Baerrera sur, 5 mi s of Floresville, sd 478 ft.

ZAPATA COUNTY — Murt Cullinan's E. Gutierrez 1, blk 4, sh 2, Fansler Partition Comitas gr, 2 mi w Escobas field, dr 1425, sand 1396-1420, test dry. J. W. Magee's Bruni 1, blk 45, Blas Uriba Tr, J. V. Borrego gr, sd 1861, gas sand 1836-38, salt water sand 1853-61. J. J. O'Hern et al's S. Neal 1, blk 3, porc 27, dr 2210 ft.

ZAVALLA COUNTY—W. L. Bridges' E. B. Flowers 1, 1320 ft nl & wl sec 19, blk 1, I&GN RR sur, lcn. Frank Buttram et al's Whitecotton 1, B&M sur No. 1, dk. Leona Oil Corp. & Witherspoon Oil Co.'s Geo. West 1, C. Bustillon sur No. 1, lcn.

TEXAS GULF COAST

BRAZORIA COUNTY — Gulf's Fairfield 1, Sandy Point prospect, A. Robeson sur, ru. R. R. Osburn's Jones 1, w of West Columbia, J. Thompson sur, abd lcn.

BURLESON COUNTY—Carl Dyer et al's Young 1, s of Caldwell, J. Bird sur, sd 1740 ft. Walter Blumenthal's Crain 1, se of Rockdale, W. C. Pierce sur, dr shale 2285 ft.

CHAMBERS COUNTY — Black Gold Pet. Co.'s Barrow 1, Jackson Lake prospect, R. Barrow sur, washing to bottom at 6023 ft.

COLORADO COUNTY — Clyle-Concord's Powell 2-B, Garwood area, I. & G. N. sur, sec 45, pulling tubing at 6120 ft, to rework.

GALVESTON COUNTY — Sun's J. E. Hughes 1, Green Lake prospect, W. C. M. Baker sur, dr rock 7048 ft.

HARDIN COUNTY — Republic Prod. Co.'s Burrell Fee 1, n of Silsby, A. A. Burrell sur, dr shale and lime 3436 ft.

HARRIS COUNTY—A. C. Hill's Swilley 1, Sheldon prospect, Victor Blanco sur, dr shale and lime 5285 ft; same operator's Swilley 1-B, Victor Blanco sur, sd 7566 ft. Texas Gulf Producing Co.'s Westmoreland 1, Bellaire prospect, J. B. Pier sur, dr sandy shale 4198 ft.

JEFFERSON COUNTY—Glenn H. McCarthy's Howeth 1, Little Pine Island prospect, T. & N. O. sur, sec 70, coring sand 7002 ft. Humble's E. Langham 1, Amelia prospect, C. Williams sur, dr sandy shale 5340 ft. Sun's Broussard 1, Labelle prospect, B. Blackmon sur, slight gas show in sand and shale at 8377 ft. Tatum & Pendigrass's Owens 1, n of Port Arthur, dr shale 1854 ft.

MATAGORDA COUNTY — Continental's Feife 1, Citrus Grove prospect, J. S. Chriswell sur, fsh 7620 ft. John Deering's Estille et al 1, Cedar Lane prospect, Tone & Jamison sur, dr shale 5942 ft. Hammon Exploration Co.'s Cleveland 1, one and half mi se of Bay City, E. Hall sur, dr sandy shale 8504 ft. Helmerick & Payne's Hawkins 1, Sheppards Mott, D. A. McCarthy sur, fsh 7555 ft. Sterling's Baer 1, sw of Sargent, S. Hoit sur, sd 6010 ft. Sun's Craig 1, s flank of Hawkinsville dome, T. Williams sur, dr shale 4213 ft.

MONTGOMERY COUNTY — W. C. Battaile's D. H. Caswell 1, 4 mi s of Conroe field, D. Davis sur, dk. Jack Frazier's Maxey 1, Goodwin area, James Brown sur, dk. Seagraves & Smith's Delta Land 1, Dacus area, T. Sheppard sur, abn lcn.

SAN JACINTO COUNTY — Cockburn's Cruse 1, Keno prospect, H. & T. C. sur No. 103, same operator's K. Moore 1, n of Rayburn, J. F. D. Rumayor sur, woc 405 ft. C. Gholson & L. Decker's Randolph 1, Evergreen area, V. Flores sur, dk. Ralph Stern & Gulf's R. B. Love Est. 1, nw of Cold Springs, D. McGee sur, fsh 5670 ft. Daily & Boeauden's Knox 1, F. Chair sur, dr shale 1367 ft.

WYOMING

CARBON COUNTY — General Petroleum Corporation's Whitford 1, sw se ne 24-20n-84w, dr 6218 ft in Morrison.

Nickel Cast Iron

The International Nickel Company, New York, has ready for distribution Section 3, No. 6, a bulletin on "Nickel Cast Iron Data". In the bulletin it is shown that the thermal characteristics of some pearlitic as well as austenitic nickel cast irons have been investigated, particular attention having been devoted to those compositions that possess generally useful engineering properties. In the low alloyed, pearlitic cast irons, limitations in the nature of less resistance to heat and corrosion narrow the applicability of these combinations to fairly low temperature ranges and but mildly corrosive surroundings.

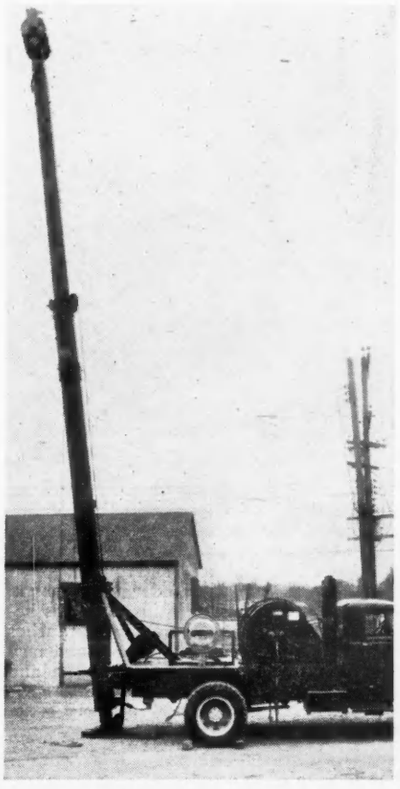
The non-magnetic austenitic cast irons have high expansion characteristics, and in order to obtain equivalent resistance to heat and corrosion with lower expansivities it is necessary to enter the ranges of about 27 to 45 percent nickel. The substitution of nickel plus copper in a 2.5 to 1 ratio for an equivalent amount of nickel in cast iron produces expansion rates comparable to the straight nickel alloys at 15 and 20 percent, but at a higher alloy content the expansivities are of a higher order than in the corresponding copper-free cast irons.

An assortment of Kibele swabs, tubing catchers and pistons and part of the company personnel shown at the January sales meeting of Kibele Manufacturing Company at Dallas, Texas. Those in the group, reading from left to right, are: Edwin Meyer, auditor; C. C. Stoner, shop foreman; Hal McKinney, draughtsman; R. E. Harris, salesman West Texas and Panhandle; Eric G. Schroeder, vice president and sales manager; William R. Wilson, salesman East Texas; Frank R. Gunn, salesman Oklahoma and Kansas; Howard Smith, salesman South Texas; C. K. Stillwagon, president Well Equipment Company of Houston, and R. A. Wilson, president, Kibele Manufacturing Company.

NEW PRODUCTS FOR THE FIELD
Machinery • Tools • Catalogs • Books

WELL-SERVICING WINCH
Franks Manufacturing Company

Franks Manufacturing Company, Tulsa, Oklahoma, has announced a new portable motor-driven oil well servicing winch, which makes any truck a fast powerful unit for pulling and running rods and tubing, bailing, swabbing and drilling. This new unit can be installed at little cost on any truck. The winch is securely attached to the truck frame directly behind the cab. Power is taken from the truck motor through a power take-off mounted on the truck propeller shaft, thus giving flexibility of speed changes afforded by the truck transmission. Pulling power of the winch is governed by the power of the truck motor.



Frank's Servicing Winch

Operation of the equipment is unusually simple and direct. Getting ready with the unit requires no rigging up. Upon reaching the location, the end of the boom at the block may be anchored to framer sill, derrick corner or any place strong enough to stand the load. If the pulling mast is used the end of the boom is anchored to the base of the mast. Complete alignment of block and winch drum is constantly maintained, regardless of anchor point or tilt of truck.

A feature of this unit is a horizontal telescoping boom which telescopes directly out the back of the truck. This boom is entirely arc welded with shielded arc equipment manufactured by The Lincoln Electric Company, Cleveland, Ohio. This boom at the block end can be telescoped far enough away from the drum to assure correct spooling of cable. Another advantage is that the boom, once the job is finished, is placed in road position and does not interfere in any way with the truck bed or draw bar.

The winch framework possesses the strength and rigidity of one integral piece of steel. The frame is of built-up type and consists of heavy steel channels and angles, electrically welded together by the shielded arc process with Lincoln equipment. Arc welding is also used in construction of the winch drum. This drum consists of a 12¾-inch reinforced barrel 34½ inches in length with 36-inch steel flanges at each end electrically welded with double brake flanges seven inches wide.

The drum capacities with different size cable are as follows: 10,000 feet of ½-inch, 7900 feet of 9/16-inch, 6500 feet of ⅝-inch, 4400 feet of ¾-inch, 3250 feet of ⅞-inch and 2500 feet of one-inch.

REAMING TOOL
The Bridgeport Machine Company

The Bridgeport Machine Company, Wichita, Kansas, has placed on the market the Roe "Pay" Underdigger, a new, patented cable tool having a number of uses, the post important of which is to enlarge the "pay" formation below the casing after a well has been drilled. The tool has been field tested for over two years and is said to have been used with success in both new and old wells.

The illustration shows the tool in operating position with the two cutters fully extended. These cutters, made of heavy, solid blocks of tough steel, are supported in the body of the tool by a socket joint at the top or shank of each cutter. The cutters are folded into the body of the tool, riding the pipe to the bottom. As the tool goes out of the pipe into the open hole, a heavy spring, controlling a cross bar, forces the face of the cutters out to operating position, where they are firmly seated on three points of the body.

Bridgeport Underdigger

A shoulder may be formed and the tool started at any desired point below the casing, a special set of starting cutters being furnished for this purpose. Then by the use of cutters of various sizes, the hole may be enlarged as desired, up to more than double the size of the drilled hole, or as little as one inch at a time. It is run in practically the same manner as an underreamer, the broad cutters digging out the sides of the hole. It may be used in either hard or soft formations.

The tool is used also for many other purposes besides underdigging the "pay," including enlarging the hole before cementing for a better distribution of cement around the casing shoe; to enlarge the hole in a water strata between two oil producing formations so that the water may be cemented off; to remove knots from the walls of a hole which interfere with lowering casing or bailer; to straighten crooked holes; to enlarge tight places in a hole; to make a shoulder at any point below the casing to start an underreamer before raising the casing; to make a shoulder to start drilling-by or side-tracking lost tools; to make a starting shoulder to straighten a crooked hole, and to remove cement from the walls of the "pay" formation after the oil string has been cemented.

AXIAL FLOW PUMP
Pennsylvania Pump & Compressor Company

Pennsylvania Pump & Compressor Company, Easton, Pa., has announced the Axial Flow Pump, a new type that was designed to accommodate low head conditions and to operate at speeds that eliminate the use of low-speed prime movers.

Differing from the regulation centrifugal pump, in which a rapidly rotating impeller throws out the water and creates pressure by centrifugal force, the axial flow pump consists simply of a pump casing in the shape of a tube and forming a part of the water passage. In this casing is placed a propeller somewhat similar to the propeller of a ship, and its rotation forces the water through the system. For handling large volumes of water at low heads, the axial pump has been found very satisfactory.

WIPER BLADE
Rex-Hide, Incorporated

Rex-Hide, Incorporated, East Brady, Pa., announces the Rex-Hide balloon wiper blade, made of soft, carbon-base rubber, with a hollow, perforated tube running its length, which, it claims, keeps the auto windshield cleaner and drier.

Ten flexible wiping ribs create alternate areas of pressure and suction with the stroke, drawing water into the hollow tube through the perforations. The self-cleaning operation prevents the same water from being smeared back and forth across the windshield. With its balloon construction, this new blade will hug even a warped glass and wipe it clean.

For extreme ice and snow, an ordinary pipe cleaner can be dipped in glycerine, then bent at one end and hung inside the hollow tube of the blade. This will maintain a glycerine film on the windshield for several hours, remove sleet, and prevent ice from forming on the glass.

This Week with the Industry's EQUIPMENT SUPPLIERS

Buckner Representing Muskogee Iron Works in Houston

A. W. Buckner, formerly with the Emsco Derrick & Equipment Company, has been made Gulf Coast representative of the Muskogee Iron Works, manufacturers of steel derricks and other oil country equipment. He was for eight years with Emsco and prior to that time was employed by oil companies. He will make his headquarters in Houston.

A. W. BUCKNER

Twin Disc Clutch Opens Tulsa Office

Twin Disc Clutch Company, Racine, Wisconsin, has opened an office in Tulsa, located at 310 East Fourth Street. John B. Jenkins will be district manager. This office will direct the sales for the states of Kansas, Oklahoma and Texas. It will also handle the service for the state of Oklahoma. The Tulsa branch is a direct factory branch office.

Well Equipment Company Personnel Changes

Well Equipment Company, Houston, has announced several changes and additions to its personnel.

D. W. Elliott, formerly representing the company in the Houston territory, has been transferred to the Southwest Texas district, with headquarters at Corpus Christi.

Rob Chapman, formerly with Wilson Supply Company, is now connected with the company and will cover the Rodessa district.

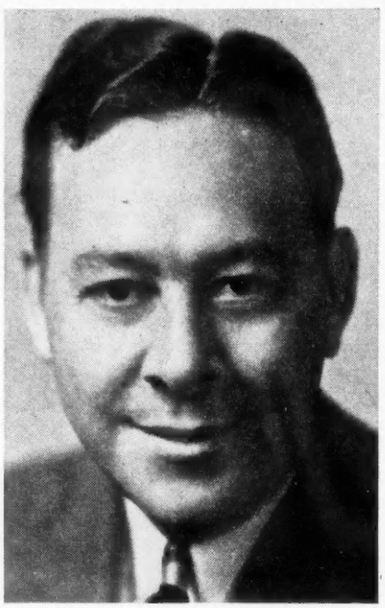
A. G. Wilcox, formerly with Gearench Manufacturing Company as West Texas representative, has joined the company and will cover the Lake Charles territory.

GUY A. TOMPSON

Norvell-Wilder Opens Office in Tulsa

R. P. (Salty) Clark has been made manager of the newly established office of Norvell-Wilder Supply Company in the Philtower building, Tulsa.

Clark started in the Mid-Continent as a roustabout. Following this experience, he spent several years with the Oil & Gas Journal. Later he was with the land department of Shell Petroleum Corporation at Los Angeles, whence he joins Norvell-Wilder Supply Company.



R. P. CLARK

Taubman Supply Expands Facilities

An expansion move has been completed by Taubman Supply Corporation of Tulsa. Construction of a new plant at Houston has been started at a cost exceeding $100,000 and H. P. Taubman, president of the company, has announced appointment of C. C. Crider to be executive vice president in charge of all branches, with headquarters in the Magnolia building in Dallas. Crider for 14 years was assistant to Taubman in the Tulsa offices.

Taubman also has announced appointment of Guy A. Tompson as sales manager with headquarters in the National Bank of Tulsa building where the company now is located on the sixth floor to provide for larger accommodations. Tompson formerly was purchasing agent for the Empire Companies in Bartlesville, Oklahoma, for the last 18 years.

C. C. CRIDER

A new Landis pipe-threading machine has been installed in the Houston plant together with other modern equipment. New pipe-threading machinery also is being installed in the company's branches at Oklahoma City and Seminole and new offices have been opened at Wichita and Russell, Kansas.

National Tube Opens Dallas Office

National Tube Company has opened a district sales office in the Magnolia Building, Dallas, Texas. F. O. Young, formerly in charge of the company's St. Louis office is manager of sales at Dallas.

New York Offices Have Been Moved.

Oil Well Supply Company, Wilson-Snyder Manufacturing Company and Erie Ball Engine Company have removed their New York office to 30 Rockefeller Plaza.

Industrial Supply Opens Freer Store

Industrial Supply Company has opened a store at Freer, Texas, in charge of Roy Clifton.

Squeaks from the Bull Wheel

Fell Out

Driving through the mountainous West Virginia, a tourist noticed a man with plow and team lying in the road.

"What happened?" asked the tourist.

The old farmer jerked a thumb upward and ejaculated: "Doggone it, I'm going to quit plowin' in that co'n field up thar. That's the third time I've fell out of it today."

Quick Photography

"Why do you say that beautiful photograph of your wife was just a snapshot?"

"Well, it must have been. Her mouth was shut."

Odor

"Pop," said the banker's boy, "you took a day off today, didn't you?"

"Yes, son. How did you know?"

The boy's nose wrinkled up a little, and he said, "You smell so of golf."

No Favors

Son: "Say, Dad, that apple I just ate had a worm in it, and I ate that, too."

Parent: "What! Here, drink this water and wash it down."

But Junior shook his head. "Aw, let 'im walk down."

Serious

Rastus: "What all did doctah tell yo' wuz de mattah wif yo'?"

Liza: "He say ah is sufferin' from acute indiscretion!"

Artistic Performance

"You should have been there. When she got through with her fan dance the noise was deafening."

"Applause?"

"No. Police whistles."

Just Deaf

I'm going with a deaf-and-dumb guy now, dearie, and he makes love with both hands.

Say, kid, that guy may be deaf, but he ain't dumb.

Relief Map

Two catty lady nudists were discussing a masquerade, and wondering what characters they should represent.

"With your varicose veins," said one sweetly, "why not go as a road map?"

Life Begins

Cheer up, Grandpa, don't you cry!
You'll wear diamonds by and by.
Uncle Sam has money mills
Made to grind out brand new bills.
He will help you in your cause
With his old age pension laws.
No more worry over bills,
Butchers' duns, or doctors' pills.
No more panic over rent,
Leave that all to Government.
Dine on squab and caviar,
Sport a streamline motor car.
When the blizzards bliz a bit,
Off to Palm Beach gaily flit.
Lead a life of pleasure bent,
But you must spend every cent!
Whoopee, Grandpa! Stay alive!
Life begins at sixty-five!

After All, It's the Spirit

"Did you enjoy the brandy peaches I sent you?"

"Thanks very much for them. The doctor wouldn't let me eat the peaches, but I enjoyed the spirit in which they were sent."

Highly Exaggerated

"I suppose all this talk about present day college man's life being all wine, women and song is exaggerated."

"It certainly is; you very seldom hear singing in the dormitories."

The Last Roundup

"You've been a steno for about all the big guys in this building."

"Yes, I guess I'm on my last lap now."

Without a Cent

She—"Would you love me if I didn't have a cent?"

He—"Sure thing, old dear, but did you every try using lifebuoy?"

Peaceful Family

"It's being rumored around that you and your husband are not getting along very well together."

"Nonsense. We did have some words and I shot him, but that's as far as it ever went."

Keep Your Powder Dry

An old lady was being shown over a submarine for the first time. After inspecting the interior of the vessel she came out on deck again and noticed the long gun.

"And doesn't that cannon get awfully wet when you submerge?" she asked her guide, a Cockney sailor.

"Lor' luv yer, mum, no," he replied. "When we submerge, two sailors are told off to hold umbrellas over it."

How He Knew

Two business men were discussing a competitor who once had been an employe of the older of the two men.

"I happen to know that fellow is a sharper and not above lying or stealing when it's to his advantage," remarked the older man.

"Do you know him personally?"

"Know him? Say, I taught him everything he knows."

Just a Spot

"I met that impossible Billswiggle today."

"Yes, and I suppose you argued with him until you were black in the face."

"No, just around one eye."

Fair Price

A minister married a couple.

"How much?" said the groom.

"Whatever you think it's worth," said the minister.

The man hesitated, fumbled, then handed him fifty cents. The minister was a good sport. He fumbled, hesitated, then counted out twenty cents in change.

OIL COMPANY OFFICE and FIELD FORMS

. . . available at mass production prices

After carefully reviewing the forms of a number of oil companies, The Gulf Publishing Company has made up six standard forms listed below and has produced these in such quantities as to enable oil companies to secure them at substantial savings.

These forms are printed on 16 lb. Bond Paper. They are substantially bound. Duplicates are printed on colored bond and perforated, pencil carbon included with each book.

Forms will be shipped prepaid at prices shown below. Samples will be sent upon request.

Number	Kind of Form	PRICE 1 Book	5 Books	10 Books
Form 100	DAILY DRILLING REPORT—1 TOUR (In duplicate—100 sets to the book)	$1.50	$6.50	$10.50
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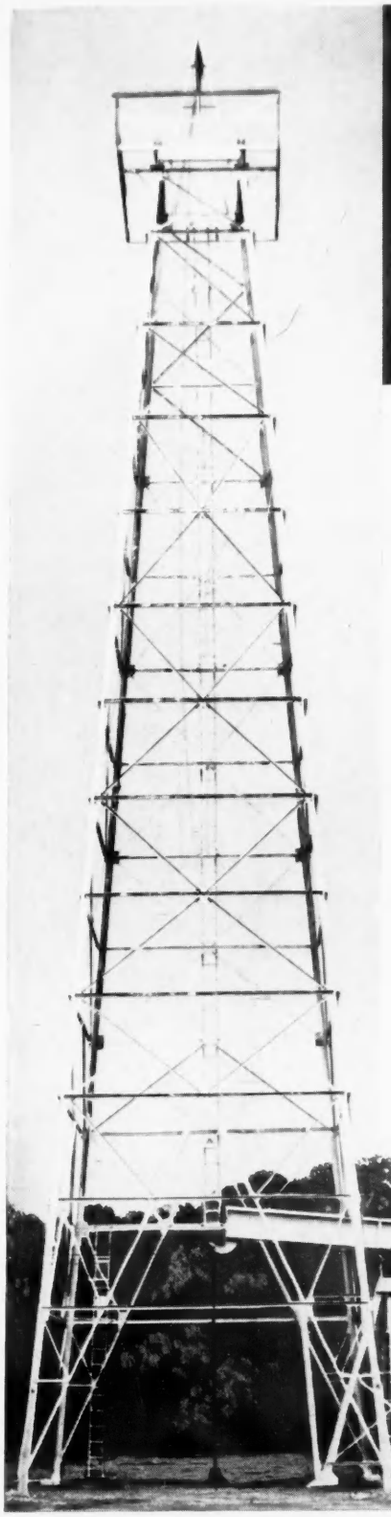

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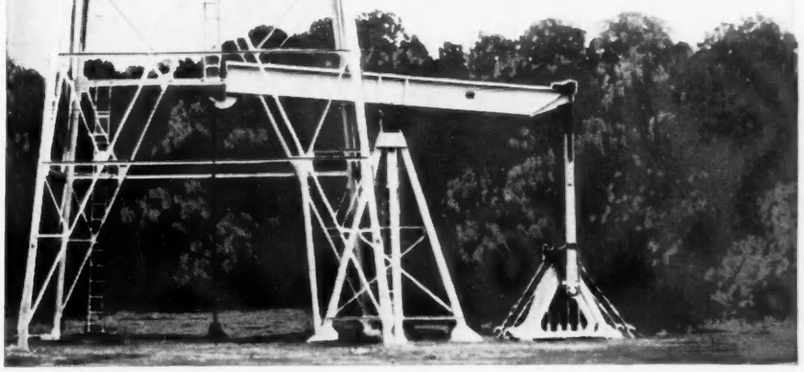

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